

RESEARCH ARTICLE

DIGITAL COMPETENCE OF ENGLISH LANGUAGE TEACHERS IN SAUDI ARABIA AND YEMEN: A SYSTEMATIC REVIEW OF RESEARCH TRENDS, CHALLENGES, AND PROFESSIONAL DEVELOPMENT NEEDS

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Abstract

As digital technologies become increasingly embedded in English language teaching scholarly attention has focused on teachers' digital competence and on the contextual factors that shapes its development across Arab contexts. This research paper aimed to review synthesise key trends, challenges and professional development requirements of English language teachers in relation to their digital competence in Saudi Arabia and Yemen. Using a qualitative evidence synthesis design, the study synthesized findings from 20 empirical studies published between 2013 and 2026. The review used content analysis, thematic synthesis, and contextual comparison to identify research trends, reported challenges, and professional-development needs in the two settings. Content analysis, thematic synthesis, and contextual comparative analysis were applied to integrate findings across this methodologically heterogeneous evidence base and to identify research patterns, challenges, and professional development needs specific to each context. The findings indicate a shift in research focus from technology access and basic use toward broader dimensions of digital competence, including Technological Pedagogical Content Knowledge (TPACK), technology-assisted language learning, digital literacy, pedagogical technology integration, and emerging digital competencies. Challenges that have been identified include lack of technological infrastructure, unreliable internet, variation in the level of teacher digital competence, problems integrating technology into the teaching of English language, lack of sufficient professional development, lack of institutional, as well as technical support, particularly in Yemen, and differences between the two countries. Significant differences can also be detected: studies in Saudi Arabia have started targeting higher levels of teacher digital competence and more innovative pedagogy, while studies in Yemen have remained more focused on more fundamental challenges of insufficient infrastructure, socio-economic difficulties, weak institutional support, and problems caused by conflict. Therefore, needs-based, ongoing, pedagogically grounded and context-specific professional development provided with the help of collaboration, mentoring, communities of practice, technical support, and institutional support are called for. The study concludes that digital competence is perceived as context-dependent multi-dimensional construct that needs to be approached through tailored interventions and policies.

Keywords: English teachers' digital competence; Research trends; Challenges; Professional development; Saudi Arabia; Yemen.

Introduction

This study reviews research on the digital competence of English language teachers in Saudi Arabia and Yemen. It examines how research trends, reported challenges, and professional-development needs have developed in these two contexts. The comparison is analytically useful because the two countries differ markedly in educational resources, digital infrastructure, institutional capacity, and the stability of their wider

educational environments. The study does not seek to generalise its findings to the entire Arab world; rather, it uses the two cases to identify context-specific priorities for supporting English language teachers' digital competence.

Characteristics of English language education in Arab countries

The context for EFL in most Arab countries has historically been dominated by a few major characteristics, many of them largely resistant to change despite the efforts by Ministries of Education to make teaching more interactive and communicative. Among them are: large class sizes and overcrowding; emphasis on high-stake achievement testing; lack of sufficient oral practices in actual communication; strong tradition of teachers and textbook dependency (Fareh, 2010). Learners are often not empowered to be independent learners; and a heavy focus on learning facts, rote memorisation, and translation instead of authentic communicative skills. Although significant efforts are made in several Arab states towards curriculum and teacher training reforms (e.g., Jordan) (Alhabahba et al., 2016); the efforts have had a mixed success to address this long existing problem as a challenge.

Technological Infrastructures, policy support for digital integration in Arab nations

Digital infrastructure as support for effective blended and face -to -face teaching varies extremely across Arab countries. The rich gulf nation of Saudi Arabia continues to pursue national digital transforming agenda with substantial investments in digital infrastructure (national digital content, certification, standards), (Al Khateeb, 2017), while conflict-affected or lower-income states such as Yemen lack a clearly articulated national ICT-in-education policy, leaving schools to respond to technology inconsistently and without coordinated support (Almutawkkil et al., 2018). Even within relatively well-resourced systems, policy ambition does not guarantee implementation. Momdjian et al. (2024) found that Lebanese teachers met ministry-level digital standards on paper but remained weak in translating those standards into collaborative classroom practice. Infrastructure and policy, in other words, are necessary but not sufficient conditions for digital competence.

Teacher-related and institutional factors affecting digital competence

It takes more than physical presence of technological infrastructure to improve teachers "ability and knowledge to teach effectively using computers. Thus, teacher competence; that is, their technological as well as pedagogical know-how, matters greatly. Al Khateeb (2017) found that most Saudi EFL teachers continue to remain at level of ' basic 'Digital competency even if they got I CT certificate because training has not targeted this specific, but generic type of training. Similarly, Daraghmeh et al. (2021) documented how centralized, curriculum-paced administrative structures constrained Saudi teachers' pedagogical use of digital tools even after their technical proficiency improved. Hamid et al. (2025) and Awais et al. (2025) point to a related problem: teacher-education curricula that emphasize operational tool use over methodological integration, which acts as a structural barrier to deeper digital competence.

Uneven development across Arab countries

Digital competence development appears to vary considerably across the Arab world, reflecting differences in educational contexts, resources, and technological infrastructure. In **Saudi Arabia and Lebanon**, the literature indicates positive progress in teachers' digital competence, although some areas still require further development. Studies in these contexts report measurable progress against established competence frameworks while also identifying specific areas of weakness (Al Khateeb, 2017; Momdjian et al., 2024). In Jordan and Egypt, digital competence, particularly in AI-related applications among pre-service teachers, is emerging but remains unevenly distributed (Awais et al., 2025). By contrast, the evidence from Yemen suggests much more limited development, largely because persistent infrastructural and educational constraints restrict

opportunities for meaningful technology integration (Almutawkkil et al., 2018; Al-Mamary, 2020). This variation is an important finding in itself, as the literature does not merely differ in quantity across countries; rather, it reflects substantially different levels of digital readiness and starting conditions within the Arab world.

Digital Competence in Saudi Arabian and Yemeni Contexts

Saudi Arabian Context

Saudi Arabia appears to be one of the Arab countries with the strongest incentives to develop teachers' digital competence. The national digital transformation policies closely align with the vision of "Vision 2030." According to Vision 2030, there is a national reform agenda where diversity in the economy is to be increased; in turn, digital skills and learning of English have become the drivers of this economic development. This, and other policies that seek to invest in technologies to transform the future education, have led to initiatives where the state encourages and supports teachers, particularly EFL teachers, in boosting digital skills. The spread of educational technologies and its impact accelerated due to/following the COVID-19 crisis, it appears to offer teachers with new access and opportunities to engage technology, and consequently improve teachers' skills on it. As Daraghmeh et al. (2021) noted, this phase forced some teachers to be "suddenly thrust into digital teaching environments that led to an upward turn in many technical aspects. To some teachers, it was like they had to jump". Furthermore, there exist partnerships that specifically focus on developing digital skills and competencies among EFL teachers like the university partnered, entitled "Khbrat" for example. The study by Daraghmeh et al. (2021) found that teachers acquired technical competences though these initiatives were less successful when it came to pedagogical transformation. Nonetheless, such interventions represent great leaps in efforts toward the promotion of the integration of technology into EFL pedagogy. For example, using MOOCs as another channel for teachers' PD which is considered a more scalable approach can complement formal courses and training. Now, Saudi Arabia looks like an intensely studied context in the Arab world concerning EFL teachers' digital competence, where studies have investigated even the basic digital competency framework (Al Khateeb, 2017) through to the pandemic-related transformation (Daraghmeh et al., 2021), including new developments such as teachers' preparedness for AI-supported language teaching (Awais et al., 2025).

Yemeni Context

For Yemen, the country seems significantly different from Saudi Arabia's situation when it comes to the promotion of digital competences; because the technological, educational, socio political, and economical backgrounds are seriously challenging for development of EFL teachers in this nation. Yemeni educational institutions have serious deficiency in several infrastructure elements such as computers facilities, power, internet coverage with many differences being observed between the public and private sector (Almutawkkil et al., 2018; Al-Mamary, 2020). Furthermore, with the onset of the war in March 2015, which resulted in extensive damage to schools and universities and disrupted the payment of teacher salaries, a significant barrier to digital transformation in the education sector has been established (UNICEF, 2023; Khaled, 2024). There is little research about EFL digital competencies among the Yemeni Arab countries in comparison with other Arab contexts. However, the limited available research has generally investigated the overall ICT skills among Yemeni teachers rather than specific teachers' digital skills, practices, and needs for professional development in the area of EFL teaching (Almutawkkil et al., 2018; Al-Mamary, 2020). Due to the current challenges in the region, the study revealed the need to first raise the capacity of teachers with regards to digital technologies by providing them with equipment and access to connectivity, a conducive environment, institutional and technical support and ongoing professional development before proceeding towards more complex digital innovations (Al-Mamary, 2020; Almutawkkil et al., 2018).

Statement of the Problem

Digital competence has become an important part of being a good teacher in the 21st century. In English language teaching these skills are even more important because teachers need to use tools and also make sure they are used in a meaningful way during lessons, tests and their own learning. Many different guides, including the European Framework for the Digital Competence of Educators (DigCompEdu) and the reports from UNESCO (2018, 2023) say that digital skills are not about knowing how to use technology. They are an idea that includes much more, than just basic knowledge of computer tools. It includes pedagogical use of technologies, development of digital resources, assessment procedures as well as social engagement and collaboration, while also emphasizing their ability to enhance quality and promote lifelong learning among learners. Existing studies have examined particular aspects of English language teachers' technology use, including ICT access, digital literacy, technology integration, and professional development. However, the evidence remains fragmented because studies differ in their concepts, participants, instruments, and educational settings. A transparent synthesis is therefore needed to distinguish common patterns from context-specific challenges in Saudi Arabia and Yemen. There are variations in the development of digital competence of Arab EFL teachers from country to country. For instance, the concept of digital transformation, implemented as part of Saudi Vision 2030, has enabled investment in various digital learning tools and teacher education programs in Saudi Arabia. Despite this, a large part of the research indicated a disparity between increased access and the application of technology in pedagogy (Al Khateeb, 2017; Daraghmeh et al., 2021). It was revealed that even with a sound awareness of the capabilities of digital technologies, teachers did not use them to the full extent of their potential in terms of deep learning pedagogies and learner-centred instructional practices. More recent work emphasizes the new forms of digital literacy development needed to meet the challenge of emergent technologies like artificial intelligence (Awais et al., 2025; Albaqami, 2025). Conversely, in less technologically developed and conflict-torn environments like Yemen, teachers face greater fundamental challenges that have hindered the development of their digital competence. Education infrastructure, connectivity and availability of digital devices are not readily available. Hence, according to multiple studies (Almutawkkil et al., 2018; Al-Mamary, 2020), teachers in Yemen showed that limited access, inadequate technical support and lack of adequate training were crucial issues. These issues have been exacerbated by continued educational disruptions due to protracted conflict, starting in 2015 (UNICEF, 2023). Thus, the research on Yemeni English language teachers' digital competence is limited. Existing body of literature on the digital competence of teachers has grown rapidly over the past few years, but there is a lack of systematic synthesis that describes the evolution of this research, the challenges encountered as well as pedagogical interventions to support English language teachers in Arab contexts. Most of these studies have focused on a country, a specific technology, or the ICT adoption at a general level; very few were comparative or regional. Moreover, contrast between a digitally developed nation and an environment challenged by conflict could provide unique and relevant insights that inform contextually appropriate strategies. Evidence from a range of studies suggests that technology adoption is driven not solely by individual teacher capacity but by other complex factors such as pedagogical beliefs, institutional culture, leadership support, teacher education programs and national policies (Tondeur et al., 2017; Falloon, 2020). Similarly, in Arab contexts, it has been observed that teachers can operate at a functional level without demonstrating proficiency in using digital technologies in learner-centred, collaborative, and pedagogical-wise advanced ways (Momdjian et al., 2024; Hamid et al., 2025). Therefore, this systematic review aims to explore research into English language teachers' digital competence in Arab regions with an emphasis on the case studies of Saudi Arabia and Yemen in an attempt to identify the research trends, problem areas, and appropriate professional development needs for the effective integration of digital technologies in language education.

Significance of the Study

This study is meaningful in that it comprehensively analyses research in an attempt to understand how it has evolved, what common challenges arise, and what opportunities for professional development are available

for the digital competence of English language teachers in KSA and Yemen. Given that digital competence is paramount for effective English language teaching within technologically enhanced classrooms, there is a necessity to examine existing research practices, challenges and training needs in Arab contexts which are often characterized by vastly different national priorities, technological infrastructure and pedagogical environments. By conducting a literature review on Saudi Arabia and Yemen (representing two radically different digital realities), this study contributes to our understanding of the impact of context on teacher digital competence and will highlight where further research is urgently needed. Moreover, the conclusions of the study have implications for education authorities, ELT, and educational planners, drawing attention to what is needed in order to support the development of teachers' digital competence and facilitate successful integration of technology into language education across the Arab world.

Objectives of the Study

The study aims to achieve the following objectives:

1. To identify the prevailing research trends in the digital competence of English language teachers in Arab contexts, with particular reference to Saudi Arabia and Yemen.
2. To identify the specific challenges faced by English language teachers in Arab contexts, with particular reference to Saudi Arabia and Yemen, regarding their digital competence.
3. To identify the professional development needs of English language teachers in Arab contexts, with particular reference to Saudi Arabia and Yemen, for improving their digital competence.

Research Questions

The study aims to address the following research questions:

1. What are the prevailing research trends in the digital competence of English language teachers in Arab contexts, with particular reference to Saudi Arabia and Yemen?
2. What specific challenges do English language teachers in Arab contexts, with particular reference to Saudi Arabia and Yemen, face regarding their digital competence?
3. What are the professional development needs of English language teachers in Arab contexts, with particular reference to Saudi Arabia and Yemen, for improving their digital competence?

Delimitations and Limitations of the study

The scope of this study was narrowed to literature concerning the digital competence, digital literacy, ICT competence or technological integration of English language teachers. A key objective was the integration of this knowledge, where appropriate, with data from Saudi Arabia and Yemen and the use of a few select pieces of work from the broader Arab region. This research article is only interested in three major areas of the study: the main trends in research, the challenges of EFL teachers, and the requirements and suggestions with regards to professional development, and thus, studies of the students, general teachers (without evidence of being an EFL teacher) or technology in the classroom without clear reference to the skill-set of teachers are omitted as far as possible. There have been very few studies in relation to digital competence specifically in relation to teachers, especially from the Yemeni background and therefore the generalisability of the Yemeni outcomes to the overall context may be limited. Steps have been taken to try and account for this throughout by implementing explicit inclusion criteria, extraction and comparison of data within the selection. In addition, several limitations should be acknowledged. First, the review was restricted to studies published in English, which may have excluded relevant research published in Arabic. Second, the corpus was dominated by quantitative survey designs (70%), which may limit the depth of understanding regarding teachers' lived experiences. Third, only five studies were identified from Yemen, reflecting limited research output from

conflict-affected contexts; this constrains the generalisability of Yemeni findings. Fourth, the inclusion of studies published up to 2026 means that some very recent publications may have been missed if not yet indexed. Finally, the reliance on self-reported measures in the majority of included studies may introduce social desirability bias.

Literature Review

This section presents related literature to digital competence of English language teachers in Arab contexts by looking at the existing work in relation to concept and dimensions of digital competence of English language teachers, developments and dimensions of **research trends** on English teachers' digital competence in Arab context, contextual challenges to the development of English language teachers' digital competence.

Defining and Identifying the Dimensions of Digital Competence

Digital competence refers to the confident, critical, and responsible use of digital technologies for learning, work, and participation in society. In teacher education, the construct extends beyond technical operation to include the pedagogically purposeful use of digital tools, the creation and management of digital resources, assessment, professional collaboration, inclusion, and the support of learners' own digital competence (Redecker, 2017).

The digital competence includes the following main dimensions of areas: (1) information and data literacy; (2) communication and collaboration; (3) digital content creation; (4) safety; and (5) problem-solving (European Commission, 2018, p. 9 as cited in Lucas & Moreira, 2018) and those five areas all refer to: digital technologies: devices, browsers, and devices of input and output, mobile apps and websites, software, operating systems and applications.

Definition of Digital Competence of English Language Teachers

For English language teachers, digital competence refers to the ability to integrate digital technologies into language teaching practices in pedagogically meaningful ways, including lesson planning, digital resource development, communication, assessment, learner engagement, and fostering students' digital competence.

According to Redecker (2017), teachers' digital competence is defined through the DigCompEdu **framework**, which describes the competences educators need to use digital technologies effectively for professional activities and for improving teaching and learning processes (p. 15). The framework organizes teachers' digital competence into six interconnected areas:

1. **Professional Engagement** by using digital technologies for communication, collaboration, and professional development.
2. **Digital Resources** by selecting, creating, managing, and sharing digital materials.
3. **Teaching and Learning** by integrating digital technologies into instructional practices.
4. **Assessment** – using digital technologies to support assessment and feedback.
5. **Empowering Learners** by using technology to promote inclusion, personalization, and learner engagement.
6. **Facilitating Learners' Digital Competence** – helping students develop their own digital skills.

(Redecker, 2017, pp. 15–16).

Digital competence is a pivotal construct in contemporary teacher education literature. Like language-in-education competence or mathematics competence, digital-age learning's essential competence means that English teachers should have high level of digital competence to implement language teaching strategies, to design materials, to provide learning experiences, and to assess the students by using of the digital tools in and

outside the classroom and they provide opportunities for their students learning developing their competencies too, Al Khateeb, 2017).

Among various definitions of digital competence provided, “the term ‘digital competence’ should address the skill, knowledge and experience used to develop new information or communication technology that can affect one’s knowledge network and career and contribute to innovative results” (Suhono et al., 2025, page 2).

There is quite a comprehensive notion which defined digital competence by Ferrari, 2013 cited in Al-Khateeb (2017) as the integrated set of knowledge, skills and attitude which ICT resources and digital media can employ to carry out tasks, solve problems, communicate, manage information, collaborate with peers and creators. This includes information and data, media literacy, information security and literacy in terms of information as the basis for the development of personal life, professional, social life and development lifelong;” Also, Ferrari (2013) described the five components of the digital competence of individuals that included an information processing dimension, the interaction dimension, the content creation dimension, the safety dimension and, finally the problem solving dimension which are related to how those can be employed when we engage in a variety of different areas of activities and practice which affect our personal, vocational and social live.

Building on this citizen-oriented model, the European Framework for the Digital Competence of Educators (DigCompEdu), developed by Redecker (2017), extends the construct specifically to teaching professionals. As applied by Momdjian et al. (2024) to the Lebanese context, DigCompEdu organizes teachers’ digital competence into six areas spanning professional engagement, digital resources, teaching and learning, assessment, empowering learners, and facilitating learners’ digital competence—the last of which addresses teachers’ capacity to cultivate digital skills in their own students rather than only in themselves.

The recent systematic reviews by, for example Suhono et al. (2025), differentiate between digital literacy and digital competence and generally define digital literacy in terms of information access, and communication while, generally, digital competence implies the skilful navigation and management of complex digital processes, the strategic use of digital tools to meet learning or work-related goal and a holistic understanding of the impact of digital technologies.

To sum up, the literature suggests that digital competence for language teachers is not a unitary technical skill but a multidimensional construct integrating technological proficiency, pedagogical judgment, and social-professional awareness (Al Khateeb, 2017).

In this context, therefore, the term **digital competence** for the present study refers to an English language teacher’s competence to apply and integrated use of the digital technologies in English language teaching through comprehensive of three components; Knowledge about digital tools; pedagogical use and integration skill to enhance teaching quality of English language for the goal of improving students’ English language achievement and digital learning of life long ability to use digital technology in their learning process and life.

A. Research Trends: The Development of Research on English Teachers’ Digital Competence

This part has focused on the use of ICT literacy and awareness studies and computer-assisted language learning (call) studies, digital competence frameworks and comparative standards studies, research methodology/design, theoretical, conceptual, or competence framework; and instruments or approaches used to investigate digital competence.

ICT Literacy and Awareness Studies and Computer-Assisted Language Learning (CALL) Studies

Research trends in English language teachers' digital competence in Arab context in most of developing world, most teachers know ICT skills and they know how to apply those skills in education, but in some cases many teachers do not practice the skills as many as other non-developing countries, and this could arise from

different challenges which this study examine their effect on the implementation of teachers' digital skills in teaching.

Early research in this area focused on what teachers know (ICT literacy) and use of computers and technology in teaching, particularly in Western Countries. Later researchers began to focus more on ICT integration and the implications of this to teaching pedagogy and teachers pedagogical skills. Recent research has explored how teachers can effectively use ICT to support students' language acquisition and develop their digital competence. For instance, Al Khateeb (2017) examined the digital competence of 110 Saudi English language teachers using the DigComp framework and a questionnaire. The findings revealed that the largest proportion of participants were Basic Users (42.1%), followed by Intermediate and Advanced Users. The study also highlighted the continued need for training programmes for English language teachers belonging to the second generation of English language teachers, particularly those who possess basic computer skills and hold certificates in basic computer information but have not received formal ICT pedagogical training. As the study notes, these teachers "had no formal ICT training in pedagogy" (p. 11).

With Yemeni context Almutawkkil et al. (2018) made an investigation among the school in Yemen and provided useful results that teachers know the benefits of ICT application in teaching English language, and the usage rates are relatively low due to a national ICT policy that does not give guidance on the development of such competence, as well as to unequal distribution of the information infrastructure across the government-funded public schools.

Studies conducted on Computer-assisted language learning (CALL) in this field of technology integration into second language instruction continue to generate research literature that contributes to developing the understanding of how technology can support effective practice of English teachers, and especially for developing their digital competence. From that, they will develop learning environment that utilize technology-embedded instruction that can promote learners English- learning skills and develop digital learning of their students, 'Computer technologies may enhance the teaching of reading and writing by using multimedia presentations with high fidelity and providing tools for interactive word processing, reading games and software programs that enhance vocabulary learning skills, and for developing learners reading skills, such as those offering practice in decoding, comprehension of key ideas,'(Alsied &Pathan, 2013, p.114).

Digital Competence Frameworks and Comparative Standards Studies

This is another recent trend, more methodologically sophisticated, that uses structured international frameworks, like DigComp and DigCompEdu, as well as standards from governments to assess teachers' competence. According to the study by Momdjian et al. (2024), "Using the DigCompEdu check in self-reflection tool among a sample of 170 in-service Lebanese teachers, researchers benchmarked their scores against the standards of the Ministry of Education and Higher Education. While the sample satisfied all the criteria established by the Ministry, teachers demonstrated specific challenges in utilizing digital instruments to foster collaboration among their students." Similarly, "Awais et al. (2025) adapted a validated instrument to measure Arab pre-service teachers' digital didactic competencies for lesson preparation (including with use of AI), lesson conduction, lesson planning, assessment, methodology across five Arab systems. These results were rather unbalanced across various aspects of professional practice related to these digital competencies" and "Hamid et al. (2025) conducted PRISMA-guided systematic review for digital competences, the assistive technologies provided for the students with learning disabilities in Saudi Arabia based on existing literature in 35 papers in the field."

B. Challenges to English Language Teachers' Digital Competence in Arab Contexts

Challenges in the Saudi Arabian Context

Challenges faced by English language teachers in developing their digital competence may be divided into several interrelated domains: the constraint of resources and infrastructure; lack of sufficient and relevant

training and development; scarcity of support at institutional and policy level; and individual constraints, including teacher's specific pedagogical strategies and contextual circumstances, affecting technology-based lessons. The evidence drawn from Saudi Arabia states that while there has been significant attempt to implement technology in education, yet the teachers still faced problems in respect of training and equipment, administrative and educational institutional support as well as the integration of technology in teaching practice (Al Khateeb, 2017; Alkahtani, 2017; Al-Khasawneh & Alshawaf, 2026). For Yemen, however, there are more factors related to ICT resources, unreliable Internet infrastructure, less capacity for the computer literacy and training for teachers and other conflict and economic factors (Ahmed et al., 2020; Hezam & Mahyoub, 2025). Thus, though the Saudi Arabia and Yemen share challenges of teachers' digital competence, professional training and institution's supported system, the proportion of each is diverse; and there are still issues regarding teachers' proficiency to utilise digital learning in pedagogy.

While Saudi scholars continue discussing the issues of quality for technology integration, Yemeni scholars focus on the basic context issues of infrastructure, institution and war. This disparity requires different approaches being implemented into practice in development of English teachers' digital competence into their daily pedagogy practice. For instance, as Al Khateeb (2017) indicated in her research, the vast majority of Saudi English teachers had ICT certificates, but their ICT skills level was only that of basic users, stating that this was due to lack of experience and training and prior knowledge, and not access. Daraghmeh et al. (2021) indicated that the rapid centrally driven transition to online learning during the COVID-19 pandemic did lead to increased operational technology skills, but it has not yet had a proportionally positive impact on the levels of the communicative pedagogy and authentic assessment of English language teachers. Teachers cited the inflexibility of the syllabus pace and schedule, the prevalence of a 'camera-off' interaction culture, and an administrative model based on a curriculum-centred approach, as pedagogical barriers even if technology was available to them. As observed by Hamid et al. (2025) in their research review of the use of assistive technologies in teaching Saudi students with learning disabilities, insufficient teacher training emerged as one of the main barriers across various studies, supplemented by infrastructural and resource shortcomings prevalent in rural and less privileged areas as well as the lack of contextually appropriate assistive technology tools compatible with Arabic instruction.

Challenges in Yemeni context

In contrast, the challenges encountered by English language teachers in Yemen are mostly the absence of basic resources and infrastructure along with institutional stability and national policies (most of which are not coherently in place). As Al-Mamary (2020) reported in his research survey of 120 Yemeni English teachers, easy access to ICT infrastructure, Availability of technical support, Availability of time, and Training were key factors predicting the level of technology use for these teachers, meaning that if any one of these was missing, the technology cannot be employed regardless of teacher intent. Almutawkkil et al. (2018) also found significant differences in availability of computers and internet connectivity and technical maintenance between government and private schools in Yemen and also noted that ICTs policy in Yemeni education "never been explicitly defined," with schools unable to establish consistency in their use. Their study also identified promising national efforts like the INTALEQ (Technology-Assisted Learning) project that received formal approval, but was never implemented, highlighting a pattern in policy execution distinct from Saudi Arabia's implementation challenges.

Another common challenge that emerges across both contexts and indeed in the wider region is the lack of Arabic-specific and culturally appropriate digital content and digital tools. This is intensified in Hamid et al. (2025) argument that digital and assistive technology often developed in elsewhere may ignore the specifics of the Arabic script and regional context thus minimizing their potential utility and appeal to Arabic teachers and students alike. The implication is that only focusing on infrastructure and training is insufficient without addressing content development.

C. The professional development needs of English language teachers towards improving their digital competence

Based on the discussed literature, the professional development needs can be broadly grouped into four main areas: a need for pedagogical (rather than solely procedural) training; a need for ongoing, structured continuing professional development (CPD); a need for institutional and infrastructural support combined with training; and emerging needs, including the development of an awareness of AI and culturally responsive digital content.

Pedagogically-driven training rather than a sole focus on procedural aspects

A frequent recommendation within the surveyed literature is the need for training with a pedagogical rather than simply technical operational focus. Daraghmeh et al. (2021) suggested that any new training programs for Saudi teachers on digital competence needs to have, "a pedagogical rather than procedural focus" that encourages teachers to use the available platforms to facilitate communicative practices and to develop effective approaches for promoting language production in an online environment. Al Khateeb (2017) made a similar point that digitally competence can't only refer to an ability to access and use ICTs, arguing that this aspect of competence has been misunderstood and 'confused with' other areas of teacher competence such as having adequate language competence or the capacity to impart information. These capabilities (what constitute digital competence) as with the capacity to teach others must be taught through pedagogical means that include explicit and implicit digital skill development embedded within pre and on-service Teacher Education programmes and continued CPD.

Sustained and Structured Continuing Professional Development

A number of researchers underline that, as a standalone activity, short-term training and professional development programmes are not effective. For example, according to Momdjian et al. (2024), "Lebanese school teachers demonstrated quite poor digital continuing professional development", highlighting "inconsistent practice and limited engagement" and recommend CPD programs be focused on teacher's ability to collaborate online through the usage of digital tools. (Nguyen, 2013), working in a comparative context within Vietnam, found no significant difference between groups of EFL teachers that had completed a face-to-face teacher training programme versus teachers who have been given guidance on online and distance training, suggesting that this sort of single instance training is infeasible. For example, Nguyen also proposes a set of self-study activities, such as, communities of practice, peer support network (mentoring) as complementary training options (2013) and in a similar vein Al Khateeb (2017) considered how large-scale Massive Open Online Courses (MOOCs) the, "best practice example" which can provide efficient and effective on-going CPD, both to in-service and in-service teachers alike.

Institutional and Infrastructural Support Paired with Training

Many of the authors suggest that professional development should be accompanied by broader institutional investment. Hamid et al. (2025) suggested the, "governments and educational authorities should allocate a considerable investment for sustained teacher education programs; establishing national strategy or policy to enhance integration of ICT in the educational system; allocating substantial professional development budget for teacher education courses on ICT; broadening the scope of high-speed telecommunications, especially in rural school areas". Similar to these authors, Al-Mamary (2020) argues that teacher training alone is insufficient for developing teacher's competency in technology use, but a combination of factors needed to be integrated, including, infrastructure/connectivity, technical training/assistance and pedagogic/cultural training for Yemeni teachers to achieve success. Almutawkkil et al (2018) make a similar argument that Yemeni Ministry of Education should issue official policies for enabling teachers to effectively use ICT in order to modernize teaching practices.

Emerging needs: AI literacy and culturally responsive digital content

More recent professional development needs focus on the area of AI literacy. In Arab contexts, Awais et al. (2025) recommend that, pre-service teacher training curricula include training of how to prompt engineer using AI tools alongside appropriate governance mechanism to govern the usage of AI in educational context (privacy issues, instructional accuracy). Suhono et al (2025) argued that English teacher training programs need to expand beyond simply offering technological skill development training and focus on developing teachers' reflective, pedagogical, critical thinking, and context specific digital competence including those skills related to their use of AI to engage in more transformative ways. Hamid et al. (2025) identified a need to develop a set of criteria or standards for Arab countries in order for digital content created needs to comply with the Arabic script with the view of improving effective translation or creation of digital content for Arabic school. The implication for this for teacher training is that simply asking teachers to train with what are essentially Anglo-centric digital tools, with inadequate attention to linguistically appropriate content could see poor levels of implementation transferring to the classroom. To summarise, one can say that addressing this gap in digital competence amongst Arabic-speaking English Language teachers, and specifically in Saudi Arabia and Yemen, require an integrated, multilateral effort, incorporating teacher training focused on pedagogy not procedure, substantial institutional investment in both training structures and IT infrastructure, and policies addressing context-specific factors including culturally responsive and Arab-script compatible tools, the centralised vs. Decentralized model of control, and in Yemen's case- basic power, connectivity, and structural stability to support any forms of digital engagement at the school, colleges levels.

Research Methodology

This study employed a qualitative evidence synthesis (thematic synthesis) design to examine empirical research on the digital competence of English language teachers in KSA and Yemen. Because the included studies differed in their designs, participant groups, instruments, and reported outcomes, a meta-analysis was not appropriate. The findings were therefore organised descriptively and synthesised thematically to identify recurring research trends, reported challenges, and professional-development needs.

Research Design and Corpus

The final review corpus comprised 20 empirical studies that met the predefined eligibility criteria. These studies addressed English language teachers, EFL teachers, English-language instructors, or pre-service English language teachers in Saudi Arabia or Yemen and examined digital competence, ICT-related competence, technology integration, technology-assisted language learning, or related professional-development needs.

Data Extraction and Organization

To ensure a systematic and rigorous analysis, a **content analysis matrix** was developed. Each of the 20 selected studies was systematically examined (see Figure 1) using this matrix to extract key information aligned with the research objectives and questions. **Thirty studies** were excluded for several reasons. Specifically, studies were excluded if they focused exclusively on students rather than teachers; examined contexts outside the scope of the review; or did not directly address the digital competence of English language teachers. Studies that examined artificial intelligence (AI) or educational technologies without addressing teacher competence or technology integration were also excluded, as were studies focusing primarily on general technology adoption or learning outcomes without providing relevant evidence concerning English language teachers. sufficient evidence to address the three research questions were excluded.

Inclusion Criteria

Studies were included when they met all of the following criteria to achieve the objectives and answer the question of the study.

1. Population and Context

- Studies focused on English language teachers, EFL teachers, language instructors, or pre-service English language teachers.
- Studies were conducted in Saudi Arabia, Yemen.
- Studies involving general teachers were considered only when their findings could be clearly differentiated and extracted for English language teachers.

2. Digital Competence and Technology Focus

- Studies investigated teachers' digital competence, digital literacy, ICT competence, technological competence, technology integration, digital pedagogical competence, or closely related constructs.
- The study had to address the use of digital technologies in relation to English-language teaching or teacher professional practice, rather than technology use by students alone.

3. Research Trends

Provided sufficient information to identify relevant research characteristics, including, where available:

- research methodology/design;
- participants and educational context;
- geographical context;
- research focus;
- instruments or approaches used to investigate digital competence.
- Studies were not required to explicitly investigate "research trends"; rather, their methodological and conceptual characteristics had to be extractable for synthesis under RQ1.

4. Challenges

- Reported empirical or clearly identified evidence concerning teachers' digital-competence challenges, weaknesses, barriers, difficulties, or competence gaps.

5. Professional Development

- Provided evidence concerning professional development, teacher training, continuing professional development, capacity building, digital-skills development, or institutional support.

6. Publication and Study Type

- Empirical peer-reviewed journal articles, conference papers, theses/dissertations, and other academically credible research reports were considered where they met the substantive criteria.
- Systematic reviews and literature reviews were not counted as primary empirical studies, although they could be retained as background sources for identifying frameworks, research trends, or additional studies.

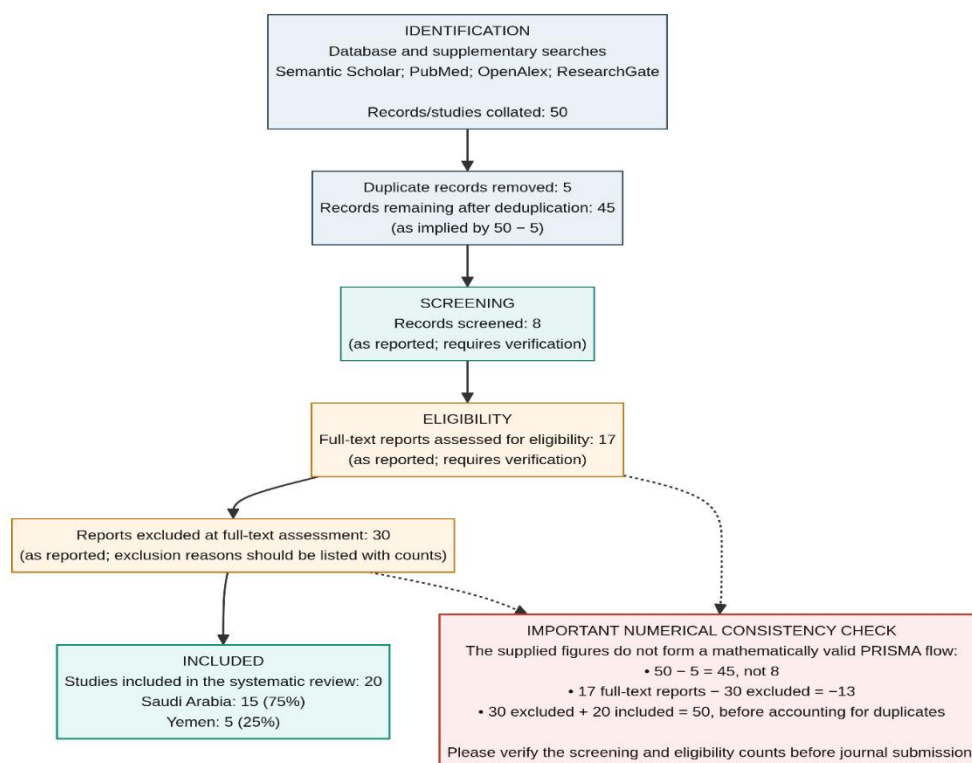


Fig. 1: PRISMA Flow Diagram Detailing Information Identification, Screening, Eligibility Assessment, and Inclusion of Studies from Saudi Arabia and Yemen.

Figure 1 summarises the study-selection process as guided by PRISMA for the literature review. Database and additional searches in Scopus, Web of science, ERIC, Google scholar, ProQuest Dissertations & Theses, ScienceDirect identified 50 records (2013-2026) of previous studies. Five papers were eliminated due to duplication, eight studies were removed in screening. Later on, 17 studies were eliminated due to eligibility criterion. Thus, a total of 20 appropriate empirical studies consisting of 15 research in KSA and five studies in Yemen were found and selected.

Data Analysis

Data analysis involved the inclusion of a content analysis matrix, where each one of the 20 selected studies were analysed and tabulated in accordance with the Study ID & Author(s), Country Focus, RQ1: Prevailing Research Trends (Methodology, Focus, Frameworks, RQ2: Specific Challenges Faced by English Language Teachers, and RQ3: Professional Development (PD) Needs (See Table 2).

Thematic Synthesis Procedure

The analysis followed the three-stage thematic synthesis process proposed by Thomas and Harden (2008). This procedure ensures that the synthesis moves beyond mere description to provide an analytical interpretation of the data.

- 1. Initial Coding:** The findings of the selected studies were systematically coded to identify significant concepts related to digital competence development. Codes were assigned to recurring issues, such as limited infrastructure, insufficient training, technology integration difficulties, digital pedagogy gaps, and emerging AI-related competencies.
- 2. Construction of Descriptive Themes:** The initial codes were grouped into related categories to form descriptive themes. For example, codes related to "limited internet access," "lack of digital devices," and "insufficient technical infrastructure" were synthesized into the broader theme of **technological and infrastructural challenges**.

3. Generation of Analytical Themes: In the final stage, the descriptive themes were interpreted in relation to the **research question no. 2**. This stage involved "going beyond" the primary studies to generate new insights into how digital competence is shaped by the socioeconomic and political realities of the target Arab contexts.

Contextual Comparative Analysis

The research article also employed a contextually comparative analysis because of the big difference between two Arab countries, Saudi Arabia and Yemen, in terms of the role played by national circumstances in the teachers' digital competence. Here, the context is Saudi Arabia (characterised by a large government-led digital transformation agenda, a large investment in educational technology, organised professional development programs) and Yemen, where the teachers' digital competence development is hampered by the inadequacy of infrastructure, education breakdown and small institutional capacity. This comparative context helps the article to understand common problems in Arab contexts, context-specific problems and priorities for professional development; and as a result, provides comprehensive evidence-based implications for teacher education and policy.

Table 1 provides the systematic review of the **20** selected studies in accordance with the research questions. It includes Study ID & Author(s), Country Focus (Saudi Arabia and Yemen), RQ1: Prevailing Research Trends (Methodology, Focus, Frameworks), RQ2: Specific Challenges Faced by English Language Teachers, RQ3: Professional Development (PD) Needs.

Table 1: Systematic Review of the 20 Selected Studies

Study ID & Author(s)	Country Focus	RQ1: Prevailing Research Trends (Methodology, Focus, Frameworks)	RQ2: Specific Challenges Faced by English Language Teachers	RQ3: Professional Development (PD) Needs
Study 1 — Alshumaimeri & Alhassan (2013)	Saudi Arabia	Quantitative questionnaire; secondary EFL teachers; examined ICT availability, use and classroom integration.	Limited computer experience; inadequate equipment, institutional support and ICT learning opportunities.	More ICT training, computer facilities and institutional support for EFL teachers.
Study 2 — Saqlain, Al-Qarni, & Ghadi (2013)	Saudi Arabia	Qualitative interviews with 12 in-service English teachers; examined readiness and perceptions of technology integration.	Limited resources and funding; inadequate training and unequal access to technology.	Technology-integration training and stronger institutional provision and support.
Study 3 — Al Ghamdi (2015)	Saudi Arabia	Qualitative case study/evaluation of an ICT-CPD programme for Saudi EFL teachers; focused on ICT competence and classroom integration	Limited confidence and pedagogical competence in integrating ICT.	Sustained ICT-CPD, practical training, follow-up support and opportunities for classroom application.
Study 4 — Al Khateeb (2017)	Saudi Arabia	Quantitative exploratory study; examined digital competence and ICT literacy among in-service English teachers using a structured competence framework.	Uneven ICT literacy and digital competence; difficulty translating technology availability into effective pedagogy.	Targeted ICT training, competence assessment and continuous professional development.
Study 5 — Farooq & Soormro (2018)	Saudi Arabia	Quantitative survey of 100 EFL teachers; examined technology use in planning, instruction, classroom management and professional responsibilities.	Limited integration of technology into lesson planning and activities; hesitation in technology-based pedagogy.	Training in technology integration, LMS use and digital lesson/activity design.
Study 6 — Almalki (2020)	Saudi Arabia	Quantitative questionnaire of 38 Saudi EFL teachers; examined technological proficiency, perceptions and technology integration.	Technological proficiency and teacher perceptions influenced integration; resource constraints.	Professional development, technological resources and institutional support. (ResearchGate)

Study ID & Author(s)	Country Focus	RQ1: Prevailing Research Trends (Methodology, Focus, Frameworks)	RQ2: Specific Challenges Faced by English Language Teachers	RQ3: Professional Development (PD) Needs
Study 7 — Alnujaidi (2021)	Saudi Arabia	Quantitative comparative study of 111 pre-service and 106 in-service EFL teachers, using the TPACK framework to examine differences in TPACK and the effects of gender, Internet access, and technology training.	Differences in TPACK; gender, Internet access at school, and technology training as significant factors affecting TPACK levels.	Strengthen technology training and integrate the connections among technology, pedagogy, and content into pre-service teacher education and in-service professional development programmes.
Study 8 — Daraghme, Mead, & Copeland (2021)	Saudi Arabia	Mixed-methods study; surveys and interviews with English K–12 teachers involved in the Khbrat PD programme; examined technology use during the pandemic.	Difficult transition to online teaching; technological, institutional and sociocultural constraints.	Pedagogically focused PD, collaboration, professional networks and sustained digital-teaching support.
Study 9 — Al Khateeb (2023)	Saudi Arabia	Quantitative study of 151 pre-service English teachers; examined digital competencies using the 2019 Competency Profile for Digital Teachers .	Uneven development across digital-competence areas.	Targeted training in weaker competence areas and stronger digital preparation for future English teachers.
Study 10 — Alshehri (2024)	Saudi Arabia	Quantitative survey of university EFL teachers; specifically examined experiences and perceptions of PD for technology integration.	Limited formal PD opportunities; training not always matched to teachers' needs.	Training in applications, digital assessment, peer collaboration, emerging technologies and ethical technology use. (ResearchGate)
Study 11 — Al-Tale (2025)	Saudi Arabia	Quantitative study of 55 Saudi university EFL teachers; examined perceptions of 21st-century digital-literacy skills .	Uneven digital-literacy skills and need to update teachers' competencies for contemporary ELT.	Targeted digital-literacy development and continuous professional development. (ResearchGate)
Study 12 — Al-Khresheh, Alshammari, & Almayez (2025)	Saudi Arabia	Qualitative study of 18 ELT supervisors; examined digital integration, LMSs and educational applications in Saudi ELT.	Institutional and implementation challenges; gaps in teachers' technological efficacy and digital integration.	Targeted PD, supervisory support, institutional strategies and sustained digital integration. (ResearchGate)
Study 13 — Al-Seghayer (2022)	Saudi Arabia	Mixed-methods explanatory/convergent design; 145 Saudi EFL teachers; examined self-efficacy in technology-assisted language learning (TALL), technological knowledge and pedagogical technology skills.	Gaps in technological knowledge, pedagogical technology skills and confidence in integrating TALL.	Strengthen technological and pedagogical training and teacher preparation for technology-assisted language learning. (ResearchGate)
Study 14 — Al-Khasawneh & Alshawaf (2026)	Saudi Arabia	Qualitative case study; 12 university EFL teachers; semi-structured interviews and thematic analysis of technology-integration experiences.	Limited institutional access, inadequate training and concerns about relevance and student capability.	Targeted/context-sensitive PD, institutional support, infrastructure and human-resource development. (E-Journal IAIN Palangkaraya)
Study 15 — Alnofal et al. (2026)	Saudi Arabia	Quantitative survey of 328 Saudi EFL teachers; examined technology integration, digital competence and cybersecurity awareness.	Moderate digital competence and cybersecurity awareness; need for safer and more effective technology use.	Continuous digital-literacy and cybersecurity PD and institutional support.
Study 16 — Ahmed, Qasem, & Pawar (2020)	Yemen	Quantitative survey with open-ended responses; 81 South Yemeni tertiary EFL teachers; examined ICT attitudes, use, computer competence and challenges.	Poor ICT availability, unreliable Internet, limited computer competence and insufficient ICT training.	ICT/computer-literacy training, infrastructure improvement, Internet access and technical support.
Study 17 — Nasser, Bin-	Yemen	Quantitative questionnaire of 60 Yemeni EFL instructors; examined	Limited pedagogical exploitation of ICT and a gap between	Develop pedagogical ICT competence and connect technology training with

Study ID & Author(s)	Country Focus	RQ1: Prevailing Research Trends (Methodology, Focus, Frameworks)	RQ2: Specific Challenges Faced by English Language Teachers	RQ3: Professional Development (PD) Needs
Hady, & Ahmed (2020)		ICT use for developing communicative competence.	ICT availability and pedagogical use.	communicative-language teaching. (ResearchGate)
Study 18 — Bin-Hady, Busabaa, & Abdullah (2024)	Yemen	Quantitative questionnaire of 54 Yemeni EFL teachers participating in a British Council-supported Community of Practice programme.	Limited opportunities for sustained collaborative professional learning.	Communities of Practice, peer collaboration, continuous professional development and sharing of teaching practices. The study reported substantial perceived CPD improvement (M = 3.90). (Revue Université Oran 2)
Study 19 — Alrefaee, Afzal, & Mohammed (2025)	Yemen	Quantitative questionnaire of 50 Yemeni EFL faculty members; examined online-learning practices and perceptions.	Technical difficulties, student-engagement problems and difficulty adapting conventional teaching to online platforms.	Online-teaching PD, technical support, infrastructure and pedagogical adaptation.
Study 20 — Hezam & Mahyoub (2025)	Yemen	Quantitative survey of 70 Yemeni EFL teachers; examined technology adoption and digital pedagogy in a conflict-affected context.	Unreliable Internet, inadequate infrastructure, socioeconomic constraints and conflict-related barriers.	Targeted interventions, funding, institutional support, sustainable PD and support for self-directed learning. (SSRN)

Based on the methodology/design descriptions provided for the 20 reviewed studies, the studies can be classified as follows:

Table 2: Classification of the 20 selected studies

Category	Frequency	Percentage
Quantitative studies	14	70%
Mixed-methods studies	2	10%
Qualitative studies	4	20%
Total	20	100%

Results and Discussion Related to RQ1

Methodological Trends in Research on English Language Teachers' Digital Competence The methodology distribution of the analysed literature highlights a clear dominance of quantitative research methodology. Out of the 20 research articles 14 (70%) used quantitative approaches. This dominance reflects the tendency for researchers studying English language teachers’ digital competence in Saudi Arabia and Yemen to have focused primarily on the measurement of teachers’ digital skills, ICT adoption and use, technological readiness, readiness of perceptions and self-reporting professional behaviour.

A strong majority of the studies utilized survey research designs with a relatively large sample sizes using questionnaire as primary tool for data collection, allowing researchers to identify levels, amounts, frequency and patterns and trends concerning teachers’ use of digital technologies (e.g., Alshumaimeri & Alhassan, 2013; Al Khateeb, 2017, 2023; Almalki, 2020; Alnujaidi, 2021; Alshehri, 2024; Al-Tale, 2025; Alnofal et al., 2026, plus many studies implemented in the Yemeni context).

Quantitative approaches can provide valuable information on the extent to which teachers adopt/use digital technologies and how they generally function, but they may pay limited attention to the reasons why teachers did/did not adopt certain technologies, as well as to their perspectives on digital learning environment, and teachers’ experiences related to the implementation of technology.

As far as qualitative research methodology is concerned, four studies (20%) conducted in the present literature had the purpose to explore technology integration, teachers' experiences, institutional factors, and teachers' professional development initiatives from a context-specific, interpretive point of view. For instance, Saqlain et al. (2013) collected data from in-service English teachers via interviews about digital technology integration, while Al Ghamdi (2015) conducted a qualitative case-study evaluation of an ICT-CPD program for EFL teachers; the study nonetheless; nevertheless, a stronger emphasis was laid on reporting the outcomes of the program rather than on investigating a wide range of teachers' lived experiences and the dynamics and relationships among participants. Al-Khreshah et al. (2025) adopted a qualitative case study methodology by having supervisors report their experience with teachers' adoption of technologies. Al-Khasawneh & Alshawaf (2026) focused on semi-structured interviews with teachers regarding issues and conditions shaping the digital competence at the level of teachers, department and institution.

Mixed-methods approaches were not strongly adopted in this corpus of literature and they constituted a limited number (two studies, 10%). Two recent studies implemented mixed-methods designs that combined the strengths of both quantitative and qualitative methods, like the one by Daraghmeh et al. (2021) who implemented survey along with semi-structured interviews with the sample teachers and Al-Seghayer (2022) using a mixed method approach. A tendency toward methodological diversification can be inferred, yet quantitative research still occupies a substantial part of this research field.

Mixed-methods research can provide a more holistic understanding by investigating measurable data in light of teachers' experiences and their perspectives. It appears that research on English language teachers' digital skills and proficiency had initially focused on the Measurement aspect, thus mainly utilizing quantitative methods and primarily questionnaires. Gradually more qualitative or mixed designs appeared, which seems to suggest increasing understanding that teaching practices, classroom dynamics, professional beliefs of instructors, institutional context, etc might play a more essential role in digital competence than previously considered.

Overall, therefore the most precise characterization of the methodological trend in the researched literature appears to be dominated quantitative approach with an emerging methodological diversity. In Saudi Arabia and Yemen, the differing realities, such as institutional opportunities and the economic capacity might require more qualitative and integrated research methods to account for these differing realities.

Development of Research Chronologically

Table 1 shows that first clear chronological trend emerges from analysing the research on teachers' digital competence. Earlier studies, particularly from 2013-2018, mostly addressed ICT availability and integration, teacher's access of computers, ICT use, ICT literacy, and technological implementation in the classroom. Take Alshumaimeri and Alhassan (2013), for example, which assessed ICT availability and classroom integration; Saqlain et al. (2013) discussed teachers' readiness and perceptions toward technology integration. And Al Ghamdi (2015) explored the effect of an ICT training program for Saudi EFL teachers while Al Khateeb (2017) discussed digital competence and ICT literacy among in-service English teachers.

From these works, we can infer that the earlier research primarily conceived of digital competence in terms of availability and usage of ICT, the ability to use technical software, basic digital literacy, and utilization of technology in the classroom. Namely, technology was the priority and it was more technology-centred than teacher-centred, compared with contemporary works. Starting from 2020, the focus of the research is increasingly broadened toward the concepts like TPACK, technological and pedagogical competence, and digital competence and digital pedagogy, community of practice, and emerging technologies.

To validate this conclusion, Alnujaidi (2021) and Al-Seghayer (2022) used the TPACK framework. As already mentioned in literature review, Al Khateeb (2023) explored teachers' digital competence based on the 2019 Competency Profile for Digital Teachers. The latest studies have taken one step forward to discuss

professional development in relation to technology integration and 21st-century digital literacy skills (Alshehri, 2024; Al-Tale, 2025), even digital competence and cybersecurity awareness (Alnofal et al., 2026).

Generally, we found a longitudinal development of research from an ICT access and use-oriented perspective toward a comprehensive model that incorporates many aspects. It is also one of the most important research trends found in this study.

Geographical Distribution of Research

Third trend, significant disparities can be observed in the geographical distribution of the analysed studies between Saudi Arabia and Yemen. As 15 of the 20 studies were carried out in Saudi Arabia whereas only **five** studies were from Yemen, due to lack of studies conducting on Digital Competence. There appears to be a clear dominance in terms of research productivity. Within the chronological boundary of the research review, studies on English language teachers' digital competence conducted in Saudi Arabia tend to be more varied and cover a wide scope including teachers' ICT use, TPACK, technology-assisted language learning, online instruction, continuing professional development and cybersecurity. Compared with Saudi studies, Yemeni research predominantly focuses on teachers' perceptions of ICT infrastructure and access, their readiness and computer competence, and online teaching; and pedagogy of ICT use in particularly difficult contexts. Ahmed et al. (2020), for example, explored teachers' computer competence and computer use in South Yemeni tertiary EFL classrooms. Nasser et al. (2020) investigated the pedagogical applications of ICT for developing communicative competence.

Trend from Availability toward Integration

Fourth trend, there exists a trend of research shifting from assessing the availability and use of ICT resources to investigating teachers' effective integration of technology into English language teaching. Most early research conducted between 2013-2018 mainly highlighted ICT availability and accessibility, and the frequency with which it was utilized. Increasingly, however, later studies start looking at the interplay between teachers' technological knowledge and pedagogical practice. Al Khateeb (2017), for example, found teachers encountering challenges in utilizing technology in their instruction, even when it was available. Nasser et al. (2020) detected a difference between teachers' knowledge about the usage and availability of ICT, and their pedagogical application of it in communicative language teaching.

As it is so prevalent in educational technology, the significance of this finding is the conceptual shift of the study of digital competence, from digital competence as a technical skill to digital competence in utilizing technology integrated into pedagogical discourse. One of the supports of this concept could be TPACK related research development, as it highlights the conceptualizing of technological and pedagogical knowledge, for instance, Alnujaidi (2021) which investigated the technical, and pedagogical knowledge with TPACK framework and Al-Seghayer (2022) which looked at the technical knowledge and the technical pedagogical knowledge, skills of university EFL learners and teachers in technology enhanced- language classrooms. In her work Al Khateeb (2023) studied the digital competencies of English teachers under preparation by applying the 2019 Competency Profile of Digital teachers.

This increase is important as these studies allow the concept of teacher digital competence to be the one more comprehensive concept that cannot be seen solely as a tool-set or the ability to apply for the technology in the classroom. Still the lack of widespread explicit engagement with common theoretical framework throughout corpus reveals that literature might be considered conceptually disparate; in which researchers employ various terms like ICT competence, ICT literacy, technology competence, digital literacy, digital competence, technological knowledge, technology pedagogy, and digital pedagogy, and therefore there is one challenge research is called upon to fulfill: increasing conceptual alignment with framework and more conceptual coherence of results with a view of finding in different Arab contexts.

Increasing Attention to Emerging Dimensions of Digital Competence

Recent studies reflect a widening of the research focus beyond technical skills to “digital literacy,” “digital pedagogy,” “online teaching,” “learning applications,” and “new emerging technology,” as well as “communities of practice” and “cybersecurity.” Al-Khresheh et al (2025), for instance, carried out a study concerning digital integration, LMS, and learning applications, whilst the study conducted by Alnofal et al. (2026) clearly addressed ‘cybersecurity awareness’ to examine digital competence. The evolution reflects that the concept of digital competence in teachers has becoming a very contextualized and dynamic, extending it far beyond simple usage of digital tool or software to more complex application of technology for pedagogy.

To conclude, Digital competence remains a variably defined concept: with a number of the selected studies offering a clearly define set of pedagogical technology skills, competence frameworks/models, whilst few conceptualize it as a single entity of ICT-literacy and -frequency usage. Particularly illustrative is the disparity between Saudi Arabian and Yemeni contexts, where the former showed signs of a higher engagement with framework-based Digital competence-integration pedagogies, and emerging Digital skills whereas Yemen remains defined by their contextual factors. This suggests an inherent relationship among a country’s digital competence and its socioeconomic-political and digital development, such as infrastructure, availability of technologies and internet reliability.

Thematic Analysis of RQ2: Specific Challenges Faced by English Language Teachers

Based on the 20 studies analysed in Table 1, the RQ2 results can be synthesized into a set of cross-cutting challenges affecting English language teachers in both Saudi Arabia and Yemen. These challenges range not only from individual and technical levels to pedagogical levels, but are also seen across the various educational contexts. As shown in Table 2, the 20 studies conducted on the ELT digital-competence revealed that challenges are multifaceted and not solely confined to technological concerns. Table 3 reveals a thematic analysis identifying and synthesizing the themes of the ELT digital-competence challenges. It shows the challenges in accordance with the analysis provided in Table 1.

Results and Discussion pertaining to RQ2 and RQ3

In this section the results and discussion of the challenges faced by English Language teachers and professional development needs in KSA and Yemen.

First, Thematic analysis of Challenges Faced by English Language Teachers

Themes were identified in all studies like infrastructural and technological barriers, limited digital competence, pedagogical integration difficulties, inadequate professional development, institutional and organizational constraints, confidence and self-efficacy, online-teaching and adaptation challenges, collaborative and professional-learning constraints, sociocultural and contextual factors, conflict and socioeconomic constraints, and emerging digital-safety challenges

Table 3: Specific Challenges Faced by English Language Teachers

Analytical Theme	Specific Challenges	Saudi Arabia	Yemen
1. Infrastructural and Technological Barriers	Unreliable Internet; inadequate computers/devices; limited access to digital resources; insufficient technological facilities; technical problems	Alshumaimeri & Alhassan (2013); Saqlain et al. (2013); Almalki (2020); Alnujaidi (2021); Daraghmeah et al. (2021); Al-Khasawneh & Alshawaf (2026)	Ahmed et al. (2020); Alrefae et al. (2025); Hezam & Mahyoub (2025)
2. Limited Digital Competence	Limited computer literacy; uneven digital competence; gaps in technological knowledge; insufficient digital-literacy skills; cybersecurity-awareness gaps	Alshumaimeri & Alhassan (2013); Al Khateeb (2017, 2023); Al-Seghayer (2022); Al-Tale (2025); Alnofal et al. (2026)	Ahmed et al. (2020); Nasser et al. (2020); Hezam & Mahyoub (2025)
3. Pedagogical Integration Difficulties	Difficulty moving from technology availability to meaningful pedagogical use; limited integration into lesson planning, classroom	Al Khateeb (2017); Farooq & Soormro (2018); Alnujaidi	Nasser et al. (2020); Alrefae et al. (2025);

Analytical Theme	Specific Challenges	Saudi Arabia	Yemen
	activities and communicative teaching; uncertainty about technology-based pedagogy	(2021); Al-Seghayer (2022); Al-Khresheh et al. (2025)	Hezam & Mahyoub (2025)
4. Inadequate Professional Development	Insufficient ICT training; limited formal PD; training that does not correspond to teachers' actual needs; lack of sustained follow-up and practical application	Alshumaimeri & Alhassan (2013); Saqlain et al. (2013); Al Ghamdi (2015); Al Khateeb (2017); Alshehri (2024); Al-Khresheh et al. (2025)	Ahmed et al. (2020); Bin-Hady et al. (2024); Alrefaee et al. (2025); Hezam & Mahyoub (2025)
5. Institutional and Organizational Constraints	Inadequate institutional support; insufficient funding; limited technical assistance; weak organizational provision; inadequate supervisory support	Saqlain et al. (2013); Al Ghamdi (2015); Almalki (2020); Daraghmeh et al. (2021); Al-Khresheh et al. (2025); Al-Khasawneh & Alshawaf (2026)	Ahmed et al. (2020); Alrefaee et al. (2025); Hezam & Mahyoub (2025)
6. Confidence and Self-Efficacy	Limited confidence in using technology; inadequate technological self-efficacy; uncertainty about effective technology integration	Al Ghamdi (2015); Al-Seghayer (2022); Al-Khresheh et al. (2025)	Ahmed et al. (2020); Nasser et al. (2020)
7. Online-Teaching and Adaptation Challenges	Difficulty adapting conventional teaching methods to online environments; technical difficulties; student engagement problems; difficulty implementing effective digital pedagogy	Daraghmeh et al. (2021); Alshehri (2024); Al-Khasawneh & Alshawaf (2026)	Alrefaee et al. (2025); Hezam & Mahyoub (2025)
8. Collaborative and Professional-Learning Constraints	Limited opportunities for peer collaboration, professional networks and communities of practice; insufficient sustained professional learning	Daraghmeh et al. (2021); Alshehri (2024)	Bin-Hady et al. (2024); Alrefaee et al. (2025)
9. Sociocultural and Contextual Factors	Sociocultural constraints; student capability; resistance/difficulty adapting to new modes of teaching; contextual differences in technology adoption	Daraghmeh et al. (2021); Al-Khasawneh & Alshawaf (2026)	Alrefaee et al. (2025); Hezam & Mahyoub (2025)
10. Conflict and Socioeconomic Constraints	Conflict-related disruption; financial limitations; socioeconomic barriers; unstable educational environment	—	Hezam & Mahyoub (2025), particularly; also Ahmed et al. (2020)
11. Emerging Digital-Safety Challenges	Need for cybersecurity awareness and safer technology practices	Alnofal et al. (2026)	Not sufficiently represented in the selected studies

As demonstrated by the studies reviewed in Table 3, the thematic analysis reveals a range of interrelated digital-competence challenges affecting English language teaching in both Saudi Arabia and Yemen, despite considerable differences in the extent and nature of each type of challenge in the two contexts. As far as Saudi Arabia is concerned, the challenges are linked with unequal digital competence, pedagogical integration, professional development, institutional support, and adjustment to different teaching delivery modes—withstanding relatively better technological infrastructure. It is more the case that teachers have access to technology but are still struggling to turn that access into effective, communicative and pedagogically meaningful teaching practices due to lacking confidence, lack of practical ICT training, poor opportunities of collaborative work between teachers, lack of institutionally and supervisor's support. Emerging concerns of cybersecurity awareness and safe use of digital technologies is another issue which the studies tend to highlight.

In the Yemeni studies, reported challenges are more strongly connected to unreliable internet access, limited availability of devices and digital resources, insufficient training, weak institutional support, and the effects of economic and political instability. These conditions appear to constrain teachers' opportunities to develop and apply digital practices. However, the available evidence is based largely on self-report surveys and a limited number of studies; the findings should therefore be interpreted as reported patterns rather than as definitive estimates of the extent of each challenge across Yemen.

Therefore, the interventions, on both context level, must continuously provide teachers and institutions with opportunities for professional development and support, though Saudi Arabia must give priority towards efficient, high-level, pedagogically driven integration and effective implementation of technologies, whereas

Yemen requires a combined strategy toward enabling basic infrastructure, technology access and teacher competence, including professional development of pedagogical uses of technologies.

Second: Thematic Analysis of Professional Development Needs

Table 4 shows the summary of professional development needs in accordance with the analysis provided in Table 1.

Table 4: Thematic Analysis of Professional Development Needs (RQ3)

Higher-Order Analytical Theme	Descriptive Themes / PD Needs	Evidence from Saudi Arabia	Evidence from Yemen
1. Digital and Technological Competence Development	ICT skills; computer literacy; digital literacy; technological knowledge; emerging technologies; cybersecurity	Alshumaimeri & Alhassan (2013); Al Khateeb (2017, 2023); Al-Seghayer (2022); Al-Tale (2025); Alnofal et al. (2026)	Ahmed et al. (2020); Nasser et al. (2020); Hezam & Mahyoub (2025)
2. Pedagogical Technology Integration	Technology-enhanced lesson planning; digital activity design; LMS use; TPACK; communicative-language teaching; technology-assisted language learning; digital assessment	Al Ghamdi (2015); Farooq & Soormro (2018); Alnujaidi (2021); Al-Seghayer (2022); Alshehri (2024); Al-Khresheh et al. (2025)	Nasser et al. (2020); Alrefaee et al. (2025); Hezam & Mahyoub (2025)
3. Continuous and Sustained Professional Development	Ongoing ICT-CPD; continuous training; follow-up support; practical application; updating competencies	Al Ghamdi (2015); Al Khateeb (2017); Al Khateeb (2023); Alshehri (2024); Al-Tale (2025); Al-Khresheh et al. (2025)	Bin-Hady et al. (2024); Alrefaee et al. (2025); Hezam & Mahyoub (2025)
4. Collaborative Professional Learning	Peer collaboration; Communities of Practice; professional networks; sharing teaching practices; mentoring and supervisory support	Daraghmeah et al. (2021); Alshehri (2024); Al-Khresheh et al. (2025)	Bin-Hady et al. (2024); Alrefaee et al. (2025)
5. Context-Sensitive and Needs-Based Training	Targeted training; competence assessment; training matched to teachers' needs; context-sensitive PD; differentiated development	Al Khateeb (2017, 2023); Alshehri (2024); Al-Tale (2025); Al-Khasawneh & Alshawaf (2026)	Alrefaee et al. (2025); Hezam & Mahyoub (2025)
6. Institutional and Technical Support	Institutional provision; technical assistance; infrastructure; funding; access to devices and Internet; organizational support	Alshumaimeri & Alhassan (2013); Saqlain et al. (2013); Al Ghamdi (2015); Almalki (2020); Al-Khasawneh & Alshawaf (2026)	Ahmed et al. (2020); Alrefaee et al. (2025); Hezam & Mahyoub (2025)
7. Teacher Confidence and Classroom Application	Building self-efficacy; practical classroom application; experimentation; supported implementation	Al Ghamdi (2015); Al-Seghayer (2022); Alnujaidi (2021)	Ahmed et al. (2020); Nasser et al. (2020)
8. Emerging Digital and Ethical Competencies	Cybersecurity; ethical technology use; emerging technologies; digital assessment	Alshehri (2024); Alnofal et al. (2026)	Less explicitly developed in the selected studies

The findings from the 20 studies, as shown in Table 2 and Table 4 present a picture of English language teachers' professional development needs reaching significantly beyond basic operation of digital tools. The studies portray a movement from the technical training in ICT to holistic digital-professional development focusing on the technological competence, pedagogical utilization, continuing development, collaboration, institutional support and context-sensitivity.

The first thematic category identifies a need to reinforce basic and advanced digital competencies for teachers. The Saudi studies, as shown in Table 4, argued for the development of a more robust level of ICT skills, digital literacies, technological knowledge and teachers' ability to handle contemporary digital technologies. Recent studies additionally highlight the need to enhance teachers' skills in cyber security, new technologies and the responsible use of technology. Similarly, the Yemeni studies also express a need for competence development with, however, a much stronger focus on the development of fundamental ICT and computer literacy. Thus, teachers need opportunity to gain basic technological competency before they can utilize complex digital pedagogies more systematically. Consequently, the specific competence gap is different in the two contexts:

Pedagogical integration of technology

The second significant finding is that professional development should not focus solely on the operation of technology, but on its usage as a tool for English language teaching and learning. The Saudi studies are strongly emphasizing TPACK, technology supported language learning (CALL), use of LMS, designing digital lessons, the digital evaluation and pedagogy in using digital tools which implies sophisticated digital competence level. The Yemeni studies also argue for the strengthened pedagogical ICT competence particularly in relation to its integration with CLT but teachers' ability to foster such competence is restricted due to limited availability of technology and infrastructural setup. Thus, the PD should be an integration of technology + pedagogy + ELT methodology and not just technical competence.

Continuous and sustained professional development

The third recurrent cross-contextual finding is that professional development must be continuous and not discrete. Several papers suggest long-term ICT-CPD, continued development of digital literacy, in-service support and the development of an environment where teachers utilize new skills in their classes. This is evident in Al Ghamdi (2015) where sustained ICT-CPD and its use in classroom are considered to strengthen the applicability and effectiveness of the training to a large extent. Similarly Yemeni studies suggest continuous professional development and sustained support. The studies of Bin-Hady et al. (2024) also highlight how CPD communities can help foster teachers continued professional learning to a great degree. Therefore, this body of work challenges the traditional model of one-off professional development workshops and argues strongly for sustained learning process, implementation, reflection and in-service follow-up.

Collaborative professional learning

The fourth theme identifies the potential of collaborative professional learning to strengthen teachers' digital competency. The development of teachers' digital competence is conceived as not only an individual but as a shared capacity built through interaction with others through professional networks and communities of practice, or through mentoring and supervision. This is very evident in Yemen particularly in Bin-Hady et al. (2024) where CPD communities have been investigated; this study reports significant increase in felt professional development. In Saudi Arabia, Daraghmeh et al. (2021) and Alshehri (2024) also emphasize the development of teacher technological integration through networks. So professional development needs to be an interactive process among teachers rather than listening to instructor alone in a technology workshop.

Context-sensitive and needs-based professional development

The fifth theme is that studies suggested that teacher professional development should take into account actual competence levels and the specific needs arising from context. In Saudi Arabia research suggested that it is crucial to offer targeted development for areas of greater weaknesses to empower teachers' competence. This means moving from generalized ICT trainings to need-based, competency-focused and differentiated PD. In Yemen, context-sensitive professional development is even more important as teachers operate in substantially different technological, institutional, economic and educational conditions. A professional-development model devised for well-resourced Saudi university cannot be readily transferred to a conflict-ridden Yemeni institution.

Institutional and technical support

The sixth theme involves considering professional development not as independent of the institutional context, but inseparable from the technological, pedagogical and educational environment. Without adequate hardware, internet, technical support and relevant provision within the institution, PD on a specific technology or pedagogy cannot yield intended benefits. This theme is very strongly depicted in Yemen where effective online instruction training requires reliable internet access and appropriate digital tools. Failure in any of these

elements will limit or even prevent teachers from utilizing the trained competencies. Saudi studies, though showing this issue, focused more on institutional support to foster sustainable technology integration.

Application to classroom practice

This is another significant finding. The studies called for the creation of space for teachers to use professional learning in their classrooms. Such learning should be translated into practice through practical tasks, experimentation, following-up, mentoring and reflective activities assessing the impact of digital technologies on teachers' practices. This is particularly vital due to repeated reference to the gap between training and classroom usage.

Contextual Comparative Analysis of Saudi Arabian and Yemeni Contexts

The comparison of the Saudi Arabian and Yemeni contexts reveals an important analytical finding, although English language teachers in both countries report broadly similar categories of professional development needs, the level, nature, and contextual conditions underlying these needs differ substantially. In Saudi Arabia, professional development needs are increasingly associated with enhancing and refining teachers' existing digital competencies, particularly in technology integration, digital pedagogy, assessment, emerging technologies, and the effective application of digital tools in English language teaching. In Yemen, by contrast, professional development needs are more strongly shaped by fundamental constraints related to technological infrastructure, Internet accessibility, limited resources, technical support, and opportunities for sustained professional learning. Thus, the two contexts should not be interpreted as experiencing identical digital-competence challenges; rather, they represent different stages and conditions of digital competence development. Table 5 presents a contextual comparison of digital competence among English language teachers in Saudi Arabia and Yemen, highlighting the similarities in professional development priorities as well as the differences in the structural and institutional conditions that shape those needs.

Table 5: Contextual Comparison regarding the Digital Competence between Saudi Arabia and Yemen

Dimension	Saudi Arabia	Yemen
Primary PD orientation	Developing and refining digital competence and sophisticated technology integration	Developing foundational digital competence while addressing basic access and infrastructure
Digital competence	Moving toward advanced digital literacy, TPACK, TALL, emerging technologies and cybersecurity	Stronger emphasis on ICT/computer literacy and basic technological competence
Pedagogical integration	Focus on effective integration, digital lesson design, LMSs, assessment and technology-assisted language learning	Focus on overcoming the gap between ICT availability and pedagogical use
Professional development	Need for targeted, continuous and needs-based PD	Need for sustainable, accessible and context-sensitive PD
Collaboration	Professional networks, peer collaboration and supervisory support	Particularly important through Communities of Practice and peer-supported learning
Infrastructure	Generally, more developed, but disparities and institutional limitations remain	Major and persistent constraint: Internet, devices, electricity/resources and technical support
Institutional support	Improving institutional provision, supervision and strategic digital integration	Essential prerequisite for effective technology use and teacher development
Contextual constraints	Institutional, pedagogical and sociocultural factors	Conflict, socioeconomic pressures, infrastructure and educational instability
Emerging priorities	Cybersecurity, ethical technology use, emerging technologies, digital assessment	Sustainable access, basic digital competence, online teaching and resilience
Overall PD model indicated by studies	Advanced, specialized and pedagogically integrated digital-competence development	Foundational, infrastructure-supported and sustainable digital-capacity development

Comparative Analysis: Digital Competence in Saudi Arabia and Yemen.

Table 5 presents the results of the contextual comparative analysis. The contrast between these two contexts is suggestive of what can be argued as two distinct points along a similar developmental path of digital competence development, not two separate and distinct models. The dimensions summarised in Table 5 suggest that infrastructure and institutional capacity are important contextual conditions shaping teachers'

opportunities to develop and use digital competence. However, the reviewed studies do not permit a causal conclusion that infrastructure alone determines all other dimensions of teachers' digital competence. These dimensions are as follows:

Primary professional development focus and digital competence.

Saudi studies conceptualize PD as an improvement of an existing baseline: Al Khateeb (2023, N=151) and Al-Tale (2025) are premised on teachers' basic competence, while Alnofal et al. (2026, N=328) focus on cybersecurity – a domain only relevant once infrastructure is established. Yemeni studies consider PD as a "building blocks" process; Ahmed, Qasem, and Pawar (2020, N=81) found that basic computer skills and basic ICT skills were still missing.

Pedagogical integration.

Teachers in Saudi Arabia are trained to use the available ICT appropriately, as Farooq and Soormro (2018) found gaps in lesson design and LMS usage. Teachers in Yemen focus on linking the available ICT to pedagogy as there is a lack of connection between its availability and pedagogical integration-Nasser, Bin-Hady, and Ahmed (2020) reported limited use of ICT for developing communicative competence.

Professional development needs

here is universal recognition among studies that PD is needed for both contexts. Saudi calls for targeted and ongoing PD (Al Ghamdi, 2015; Alshehri, 2024, about ill-fitting training) contrast with Yemeni recommendations for sustainability in crisis (Hezam & Mahyoub, 2025); Bin-Hady, Busabaa, and Abdullah (2024) identified high teacher perceptions of CPD (M=3.90) resulting from a low-cost Community of Practice model.

Collaboration

The concept of teacher collaboration was present in both contexts although their configuration differed: the Saudi collaboration structure was formal and programmatic (e.g. Khbrat, Daraghmeh, Mead, & Copeland, 2021), whereas the Yemeni Community of Practice model (Bin-Hady et al., 2024) was informal and substituted for institutional support rather than augmented it.

Infrastructure

The most striking distinction between the two contexts concerned infrastructure: Saudi teachers' struggles lay within a well-established system (Alshumaimeri & Alhassan, 2013; Saqlain, Al-Qarni, & Ghadi, 2013), whereas Yemeni teachers' prerequisite issues were basic access and internet unreliable- exacerbated by political instability (Hezam & Mahyoub, 2025) and inhibiting online learning (Alrefaee, Afzal, & Mohammed, 2025).

Institutional support. Saudi teachers call for improved and institutionalised support (Al-Khasawneh & Alshawaf, 2026, about the continued prevalence of access inequalities), while Yemeni teachers see it as a prerequisite to any form of digital learning or PD (Alrefaee et al., 2025; Hezam & Mahyoub, 2025).

Contextual constraints

For teachers in Saudi Arabia, these constraints were more institutional and socio-cultural (Al-Khasawneh & Alshawaf, 2026); in Yemen the contextual limitations were those tied to conflict and socio-economic instability which PD on its own could not address (Hezam & Mahyoub, 2025).

Emerging priorities

Unlike the focus in Saudi Arabia on advanced topics such as cybersecurity, ethics, and emergent technologies (Alnofal et al., 2026; Alshehri, 2024), Yemeni teachers had consolidative priorities such as online teaching skills and technical support (Alrefaee et al., 2025; Hezam & Mahyoub, 2025).

Professional Development model as a whole

Overall, the two evidence bases point to different priorities rather than to two fixed stages on a single developmental pathway. The Saudi studies more often examine the refinement of technology integration and related professional-development needs, whereas the Yemeni studies more often foreground foundational access, connectivity, technical support, and the continuity of teaching under difficult conditions. These differences may also reflect variation in study designs, samples, measures, and publication volume; they should not be treated as direct measures of national teacher competence.

Synthesis

It is highly premature to consider recommendations tailored for the more advanced digital competence levels among Saudi teachers if applied in Yemen, where prerequisite levels of infrastructure and institutional support remain an issue. Digital competence among Arab EFL teachers is context-dependent and frameworks such as DigCompEdu need to be adapted to each context.

Overall comparison suggests that to assess digital competence of Arab EFL teachers on how their needs for PD might be responded to effectively does not involve using a single benchmark/standard. Where similarities may exist, (collaboration on PD and the perceived importance of it in general), it is on aspirations but where differences exist, (namely on infrastructure and capacity on both levels as mentioned above) it reflects common but different challenges. As the next step which is systematic literature review on teachers' needs of PD implies that any tailor-made solution that address the most advanced need(s) of Saudi Arabian context, could be too sophisticated or too premature to be implemented within the Yemeni educational setting. The context in Yemen is the 'entry-point' condition to a more developed stage; a step taken by Saudi Arabia earlier. This calls for different contextualisation approaches when comparing "Digital Competence of English Language Teachers in Arab Contexts", especially for pedagogical framework like DigcompEdu.

Recommendations

Based on the findings of the study, the following recommendations are proposed:

Recommendations for Education Authorities in Saudi Arabia and Yemen

1. Introduce flexible digital competence frameworks sensitive to the specific context, which should include TPACK, digital content creation, assessment, inclusive teaching practices, collaboration, cybersecurity, ethics, and AI literacy.
2. Offer continuous, needs-based professional development: hands-on training, mentoring, classroom implementation, collaboration, reflection, and follow-up with evaluation through teaching practices and students' results.
3. Make digital policies consistent with the national context and the resources available, offering necessary institutional support, technical assistance, adequate time for preparation, and stable financing resources.
4. In Saudi Arabia, priority should be given to strengthening digital pedagogy, technology-enhanced assessment, AI integration, inclusive educational practices, and innovation. In Yemen, priority should be focused on the provision of reliable electricity and Internet connectivity, adequate access to digital devices, regular device maintenance and repair, technical support, and the development of foundational digital literacy skills.
5. Develop and reinforce professional support mechanisms: communities of practice, mentoring, technical assistance teams, and institutional practices enabling teachers to sustain technology integration practices.

Recommendations for English Language Teachers in Saudi Arabia

1. Improve TPACK and strategic technology integration by using digital resources for learning objectives and evaluating by results.
2. Build enhanced digital teaching and assessment competency, including digital materials, tasks, feedback, and technology supported assessment.
3. Build advanced, inclusive, ethical, and safe use of technology, including digital accessibility, cybersecurity, ethical AI and support for diverse learning needs.
4. Build collaboration and reflection-oriented professional development through coaching, communities of practice, collaboration with colleagues, observation of classroom practice, and reflective analysis of learning and technology.

Recommendations for English Language Teachers in Yemen

1. Build fundamental resilient digital competence including online safety, online communication, creating & manipulating simple digital resources low on bandwidth.
2. Facilitate adaptable online offline and Blended approaches utilizing down loaded resources available offline and requiring low bandwidth that remain available after loss of connectivity or electricity.
3. Facilitate adaptable pedagogical practices to ensure continuity of learning when infrastructure and facilities are impacted or work is suspended.
4. Foster strong professional support and collegiality through building connections with fellow English teachers and resources thereby reducing the isolation felt by teachers working in English.
5. Scale the use of technology enhanced teaching to areas of Online digital assessment, student-teacher communication and enhancing student's communicative competence.

Conclusion

This review synthesised findings from 20 empirical studies concerning the digital competence of English language teachers in Saudi Arabia and Yemen. The evidence indicates that digital competence is a multidimensional construct that includes technological knowledge, pedagogical application, professional learning, and the institutional conditions that enable teachers to use digital tools meaningfully. Because the included studies vary in design, context, and measurement, the findings should be interpreted as a synthesis of reported patterns rather than as causal or population-wide estimates.

With regard to research trends, the study has found that the existing literature showed a shifting focus from early concerns regarding teachers' ICT availability, access and attitudes, and basic levels of technology use, to higher levels, such as ELTs' digital competence, TPACK, digital literacy, technology integration, technology-enhanced language learning (TELL) and new digital technologies. While survey studies were predominant, qualitative and mixed-methods research has recently started to emerge to capture the complexities of ELTs' experiences. There were studies concentrating more on quality, effectiveness and pedagogical practices with digital technologies in the case of Saudi Arabia, while in the case of Yemen they were still much concerned about ICT access, infrastructure, digital skills, online learning and the impact of conflict and limited socioeconomic resources.

The study has revealed that there are some common challenges shared by teachers in both contexts, but the emphasis was on their differences. Both countries face interrelated difficulties such as lack of or unreliable technology infrastructure, varied levels of digital competence, limited technology self-efficacy, challenge to move from the mere acquisition of technology to actual classroom practice and its integration, lack of pedagogical skills to use the technology, absence of sustained and appropriate professional development

opportunities and limited institutional or technical support. Saudi ELTs were more concerned about the quality of digital integration, whereas Yemen's teachers needed help to overcome more fundamental obstacles: electricity, Internet connection, devices, technical support, finance and institutions.

With regard to professional development, the study has found that existing studies conducted in KSA and Yemen indicated that most of professional development were characterised by brief sessions focused on only how to operate particular technologies and lacking the integration with teaching methods and classroom practice. It is suggested that both Saudi and Yemen's teachers would significantly benefit from continuous, need-based and technology integration professional development. Saudi's professional development needs to move towards advanced digital competence, TPACK, technology enhanced assessment, AI and new digital technologies, digital safety and security, ethics in technology use and new language teaching practices, whereas Yemen's teachers require more foundational digital literacy, practical technology integration, effective online learning strategies and a mix of continuous technical and institutional support. Moreover, peer mentoring, communities of practice, teacher networks, supportive supervision and teaching learning support communities were proposed to assist the teachers' lifelong learning.

In general, the findings of the study revealed that digital competence is highly context-specific. The comparison indicates different priorities in the available literature. Saudi studies more often focus on the quality of technology integration, pedagogical application, and sustained professional support. Yemeni studies more frequently report basic constraints related to electricity, internet access, devices, technical support, and institutional stability. These patterns support context-sensitive planning, but they should not be interpreted as evidence that either country occupies a fixed position on a universal scale of teacher digital competence.

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مقالة بحثية

الكفاءة الرقمية لمعلمي اللغة الإنجليزية في المملكة العربية السعودية واليمن: مراجعة منهجية للاتجاهات البحثية والتحديات واحتياجات التطوير المهني

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المُلخَص

في ظل التوسع المتسارع في استخدام التقنيات الرقمية في تعليم اللغة الإنجليزية، يترادى الاهتمام بكفايات المعلمين وكفاءتهم الرقمية، والعوامل السياقية المؤثرة في تنمية هذه الكفاءة في السياقات العربية المختلفة. هدفت هذه الدراسة إلى تركيب أبرز الاتجاهات والتحديات واحتياجات التطوير المهني لمعلمي اللغة الإنجليزية فيما يتعلق بكفاءتهم الرقمية في المملكة العربية السعودية واليمن. واعتمدت الدراسة تصميم المراجعة النوعية للأدلة، حيث جرى تركيب نتائج 20 دراسة تجريبية نُشرت خلال الفترة من 2013 إلى 2026. واستُخدمت أساليب تحليل المحتوى، والتركيب الموضوعي، والمقارنة السياقية لدمج النتائج المستخلصة من قاعدة الأدلة المتباينة منهجيًا، ولتحديد أنماط البحث والتحديات واحتياجات التطوير المهني الخاصة بكل سياق. تشير النتائج إلى تحول في توجهات البحث من التركيز على إتاحة التكنولوجيا والاستخدام الأساسي لها نحو أبعاد أوسع للكفاءة الرقمية، تشمل المعرفة التكنولوجية والبيداغوجية والمحتوى (TPACK)، والتعلم اللغوي بمساعدة التكنولوجيا، ومحو الأمية الرقمية، والتكامل التربوي للتكنولوجيا، والكفايات الرقمية الناشئة. ومن التحديات التي جرى تحديدها: ضعف البنية التحتية التكنولوجية، وعدم موثوقية خدمات الإنترنت، والتفاوت في مستويات الكفاءة الرقمية لدى المعلمين، وصعوبات دمج التكنولوجيا في تعليم اللغة الإنجليزية، ونقص فرص التطوير المهني الكافية، وضعف الدعم المؤسسي والفني، ولا سيما في اليمن، إلى جانب الفروق القائمة بين البلدين. وتظهر فروق جوهرية بين البلدين؛ إذ بدأت الدراسات في المملكة العربية السعودية تستهدف مستويات أكثر تقدمًا من الكفاءة الرقمية للمعلمين وممارسات تربوية أكثر ابتكارًا، في حين ظلت الدراسات في اليمن أكثر تركيزًا على التحديات الأساسية المتمثلة في قصور البنية التحتية، والصعوبات الاجتماعية والاقتصادية، وضعف الدعم المؤسسي، والآثار الناجمة عن الصراع. وعليه، تدعو الدراسة إلى تبني برامج تطوير مهني قائمة على الاحتياجات، ومستمرة، ومرتكزة على أسس تربوية، ومراعية لخصوصية السياق، مدعومة بالتعاون والإرشاد المهني ومجتمعات الممارسة والدعم الفني والمؤسسي. وتخلص الدراسة إلى أن الكفاءة الرقمية بنية متعددة الأبعاد تعتمد على السياق، ينبغي التعامل معها من خلال تدخلات وسياسات مصممة خصيصًا لها.

الكلمات المفتاحية: الكفاءة الرقمية لمعلمي اللغة الإنجليزية؛ الاتجاهات البحثية؛ التحديات؛ التطوير المهني؛ المملكة العربية السعودية؛ اليمن.

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