

Experiences and perceptions of Saudi EFL teachers on professional development in technology integration into teaching

Saudi Journal of
Language Studies

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Received 26 September 2024
Revised 2 November 2024
Accepted 18 November 2024

Abstract

Purpose – The study aims to explore the experiences and perspectives of EFL teachers on professional development in integrating technology into teaching at Saudi universities from the teachers' perspective. It also tries to provide the educational research community with an updated professional development description of the experiences and perceptions of EFL teachers regarding the professional development of technology integration into their teaching opportunities at their universities.

Design/methodology/approach – The current study used survey research. The participants are EFL university teachers who completed an online questionnaire.

Findings – The survey research findings show that most EFL teachers have extensive experience and a wide range of technology skills acquired mainly through self-directed learning and interactions with colleagues. However, they face challenges accessing professional development opportunities for technology integration in EFL teaching at their universities. Most believe the current professional development programs are inadequate and not tailored to their needs. While some teachers see a positive impact on student engagement and teaching efficiency, others are uncertain about the impact of attending professional development in technology integration into teaching students' language skills. Overall, EFL teachers express a strong need for more specific training and support in technology integration into teaching.

Originality/value – Some studies focused on professional development training related to the use of technology in education in Saudi Arabia (Alsowat, 2021; Alghamdi, 2022; Aljameel, 2022; AlMutairi *et al.*, 2022). To my knowledge, no study has aimed to examine EFL university teachers' experiences and perceptions of professional development regarding the use of technology in their EFL teaching.

Keywords EFL teachers, Professional development, Technology integration

Paper type Research paper

Introduction

In recent decades, the rapid advancement of information and communication technology (ICT) has profoundly transformed various sectors, including education. As technological innovation continues to shape daily life, there is an increasing demand for its integration across all facets of society, with education being a critical area of focus. Additionally, since March 2020, the COVID-19 pandemic accelerated the shift to digital tools, pushing educators to adopt remote teaching. In response to this global shift, educational policymakers are pushing

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The author expresses deep gratitude to the participants for their involvement in the current study.

Availability of data and materials: The data is available upon request by contacting the author.

Funding: This research did not receive a specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Author contributions: A M was the principal investigator of the study. The author confirms full responsibility for the following: study conception and design, data collection, analysis, interpretation of results, and manuscript preparation.



for integrating technology into teaching practices, recognising teachers' essential role in facilitating this transition. Teachers' technological knowledge, skills, and attitudes are central factors in successfully implementing technology in the classroom, making teacher's professional development a crucial component of the technology integration in the education shift.

Despite the increasing emphasis on technology integration in education, many challenges persist, all over the world, particularly in Saudi universities' English as a Foreign Language (EFL) instruction. While numerous technological tools and resources are available to enhance language teaching and learning, teachers often face difficulties in selecting the most appropriate tools to align with their instructional goals and learners' needs. Existing studies have explored aspects of professional development (PD) related to technology use in education in Saudi Arabia (Alsowat, 2021; Alghamdi, 2022; Aljameel, 2022; AlMutairi *et al.*, 2022). However, there remains a gap in understanding the specific professional development needs of EFL teachers, particularly in terms of how these needs can be addressed to improve technology integration in their teaching practices. Further investigation into teachers' experiences and perspectives is necessary to inform and enhance the effectiveness of professional development programs in this context.

To address this gap, the present study aims to explore the experiences and perspectives of EFL teachers in Saudi universities regarding their professional development in integrating technology into their teaching. By examining teachers' insights, this study seeks to provide a comprehensive understanding of their professional development needs and challenges in using technology effectively in EFL instruction. Furthermore, the findings of this study are intended to offer valuable insights to educational researchers, teacher education programs, and university administrators. These insights will contribute to developing targeted strategies and programs that support EFL teachers in their professional development, ultimately enhancing the integration of technology in language teaching and improving learning outcomes.

Therefore, this research will contribute to this line of research by answering the following research questions:

- (1) To what extent do Saudi university EFL teachers integrate technology into EFL teaching, and what challenges do they face in this integration?
- (2) In what ways have professional development opportunities for technology integration provided by Saudi universities impacted EFL teachers' instructional practices, and what factors contribute to the success or limitations of these programs?
- (3) How do Saudi university EFL teachers perceive the effectiveness of the professional development programs related to technology integration, and how do these perceptions affect their willingness to adopt new technologies in their teaching?

Literature review

The rapid advancement of technology in education has created both opportunities and challenges for teachers, who must adapt their teaching methods to keep pace with digital innovations. A new debate in the field of language education was related to the role of humans in the use of technology in teaching. Thorne (2024) discusses the co-evolution of humans and technology, from early tool use to modern language-learning applications, highlighting how digital tools shape user behaviour and communication norms. Despite advances such as GenAI, Thorne (2024) underscores the irreplaceable role of human teachers in fostering motivation, empathy, and intercultural skills, which technology cannot replicate. Furthermore, Gao (2024) argues that new technology such as AI can't replace the holistic, complex role of human teachers, who perform multifaceted tasks beyond AI's reach. He insists that teacher education programs should thus focus on developing these humanistic qualities, empowering teachers to use AI effectively while retaining control over core educational values. In response,

professional development (PD) programs have become crucial for equipping teachers with the skills and knowledge necessary to effectively integrate digital tools into their classrooms. This is especially important in EFL contexts, where technology offers unique opportunities to enhance language learning through interactive and engaging methods.

Theoretical framework

Effective professional development in technology integration is often grounded in theoretical models such as the Technological Pedagogical Content Knowledge (TPACK) framework, which emphasizes the dynamic interplay between technology, pedagogy, and content knowledge (Gondwe, 2021). TPACK serves as a foundation for understanding how teachers can use technology to enhance teaching practices and improve student learning outcomes. Similarly, the Technology Acceptance Model (TAM) (Davis, 1989) highlights how teachers' perceptions of technology's usefulness and ease of use influence their willingness to adopt it in their teaching.

The need for professional development

Recent studies underscore the need for ongoing professional development in technology integration. Wyss *et al.* (2021) argue that many teachers lack the comfort and familiarity required to use technology effectively in their classrooms, hampering its integration. Similarly, Borisenkov *et al.* (2021) highlight the importance of training programs that focus on digitalization and media education integration into professional training. Without adequate training, teachers may resist adopting new technologies, leading to a gap between available resources and their use in teaching.

Furthermore, Aghaziarati *et al.* (2023) emphasize the role of professional development in fostering positive dispositions toward technology in their study about teacher attitudes toward artificial intelligence (AI). This study highlights a correlation between teachers' awareness of AI and their willingness to adopt such technologies, further illustrating the necessity of PD programs that target specific technological competencies. Similarly, Zhou *et al.* (2022) suggest that EFL teachers require training in technology integration regardless of their years of teaching experience.

In Saudi Arabia, professional development in technology integration is essential for EFL teachers to meet the Ministry of Education's standards and address the diverse needs of learners. Studies have shown that Saudi EFL teachers need professional development to effectively integrate technology into their teaching. For example, Almalki (2020) recommended that Saudi EFL teachers be provided with PD and support in technology integration. Alghamdi (2022) emphasized the challenges EFL teachers face in implementing Mobile-Assisted Language Learning (MALL) during the COVID-19 pandemic, underscoring the need for increased proficiency in developing MALL activities. Additionally, Aljameel (2022) and Alsowat (2021) both stressed the importance of structured, ongoing teacher training in technology use to enhance teaching practices.

Perceptions of EFL teachers towards PD

Technology integration has become increasingly essential in enhancing educational outcomes. However, its success in the classroom largely depends on teachers' perceptions of professional development in this area. The TPACK framework offers a foundation for understanding how EFL teachers view their professional development needs and the role of technology in enhancing their practices. It enables exploration of how teachers' attitudes toward technology integration are shaped by their experiences, training, and support systems.

Recent studies reveal that EFL teachers generally have positive attitudes towards technology integration, although their perceptions of PD in this area vary. For instance, Kwangsawad (2017) implemented a professional development program for 32 in-service EFL

teachers, reporting that all participants had positive experiences. Similarly, [Zhou et al. \(2022\)](#) found that Chinese EFL teachers viewed technology-supported PD as empowering and constructive for their professional growth.

On the other hand, [Kianinezhad \(2023\)](#) highlights the complex nature of attitudes toward online teaching, pointing to the need for tailored PD approaches that consider teachers' gender, age, and experience. [Ahmed et al. \(2020\)](#) noted that EFL teachers in South Yemen exhibited positive attitudes toward using technology, particularly for enhancing oral language skills. These findings align with studies like [Bristi \(2018\)](#), which reported that Bangladeshi teachers also viewed EFL websites positively as teaching tools. These studies suggest that recognising and building on teachers' positive attitudes toward technology can enhance their PD experiences.

Barriers to PD

Despite the recognised importance of PD and generally positive attitudes towards technology, several barriers hinder effective PD in technology integration. [Zhou et al. \(2024\)](#) found that while teachers are eager to integrate technology, many feel that PD programs do not adequately address their specific needs or offer sufficient hands-on training. Similarly, [Zhou and Eslami \(2023\)](#) identified a significant gap between teachers' knowledge and the practical use of technological tools, with less technologically literate teachers struggling more in their classrooms.

Other studies have pointed out institutional and practical challenges. [Tessema and Belihu \(2023\)](#) noted issues such as lack of commitment, collaboration, and institutional support as barriers to self-initiated PD. [Selialia and Kurata \(2023\)](#) highlighted limited funding and inadequate PD opportunities as additional obstacles. The COVID-19 pandemic, as discussed by [Atmojo and Nugroho \(2020\)](#), further exposed gaps in training and support for online teaching.

To address these barriers, [Khukalenko et al. \(2022\)](#) emphasised that teachers require PD opportunities that go beyond basic technical skills to encompass pedagogical and content knowledge, aligning with the TPACK framework. Furthermore, [Pappa et al. \(2024\)](#) emphasised the need for establishing teaching communities where educators can share experiences, fostering collaboration and ongoing PD.

The literature emphasizes the critical need for comprehensive and ongoing professional development programs that adapt to the changing technological landscape. Well-structured PD, tailored to the needs of EFL teachers, is essential for shaping teachers' perceptions and use of technology in their teaching. Studies, such as those by [Pan and Gan \(2020\)](#) and [Güler and Özkan \(2018\)](#), suggest that collaborative, community-oriented PD practices can significantly enhance teachers' confidence and competence in technology use, bridging the gap between existing knowledge and required skills.

Method

The current study used survey research. Participating university teachers completed a questionnaire in September 2024, at the beginning of the academic year.

Participants

The data was collected from 45 teachers in different Saudi Arabian universities, including five males and 40 females. Their ages ranged from 25 to over 55, with the majority falling in the 35–44 age category. The highest degree obtained by the participants varied from a bachelor's degree to a Doctorate, with most holding a master's degree. The teachers were primarily experienced in teaching EFL for over six years. However, in a few cases, the experience in teaching EFL at the university level was less than three years (four cases). Most participants had been using technology in their EFL teaching for over two years, with a few cases where

technology had been used for two years or less in their EFL teaching (seven cases). For more details regarding the frequency and percentage of each category, refer to [Table 1](#).

The study involved 45 participants, representing a small sample of the target population—Saudi EFL university teachers. While this sample size is limited, it can be statistically justified as sufficient for an exploratory study. Several factors are typically considered in sample size justification, including population size, confidence level, and margin of error. In this case, estimating the total population size (i.e. the number of Saudi EFL university teachers at Saudi universities) was not feasible due to a lack of available data.

Since the actual population of Saudi EFL university teachers may exceed a thousand, collecting data from more participants was impractical, especially without support from the Ministry of Education. Consequently, his study did not include statistical relational analysis between variables or generalizability. However, the data from the 45 respondents offer valuable insights for exploratory purposes.

Instrument

Questionnaire

Some studies used the Technology Uses and Perceptions Survey (TUPS) survey or an edited version of its domains and questions such as ([Dogan et al., 2021a, b](#); [Scherman-Siver, 2021](#)). TUPS is a well-known questionnaire used in American schools to assess teachers' use of technology which was created by The [Florida Centre for Instructional Technology \(2019\)](#) at the University of South Florida. It is a more comprehensive survey comprised of 200 questions, and is divided into seven domains: (1) Technology Access and Support, (2) Preparation for Technology Use, (3) Perceptions of Technology Use, (4) Confidence and

Table 1. Participant phase one demographic information

Demographic	Frequency	%
Gender	Male	5
	Female	40
Age	Under 25	0
	25–34	12
	35–44	25
	45–54	6
	55 and above	2
Highest degree obtained	Bachelor	4
	Master	18
	Doctorate	23
Years of EFL teaching experience	0–2 years	4
	3–5 years	8
	6–10 years	15
	11–15 years	12
	+16 years	6
Years of using technology in EFL teaching	0–2 years	7
	3–5 years	15
	6–10 years	15
	+10 years	8

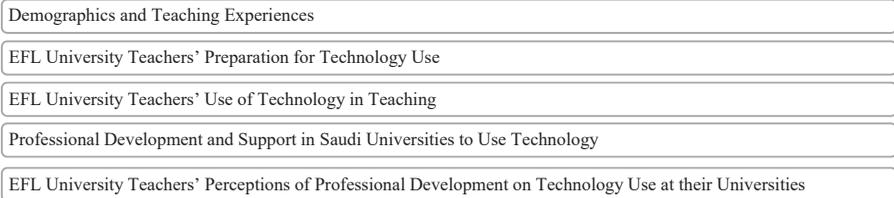
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Comfort Using Technology, (5) Technology Integration, (6) Teacher and Student Use of Technology, and (7) Technology Skills and Usefulness. It was based on the 2016 ISTE standards. TUPS is used also to guide future PD initiatives (FCIT, 2019). Although it was not possible to use the TUPS in the current study due to its copyrights, some domains and questions were included in the questionnaire of the current study which was built by the researcher.

The literature has centred the study questionnaire design that aims to explore the Saudi EFL university teachers' professional development of technology integration into their teaching. The questionnaire reflects the key findings and theoretical frameworks from the literature review while addressing the specific context of Saudi EFL educators. The researcher followed a structured approach. Firstly, the survey was aligned with the key themes from the literature which are: Technology Integration Needs: Skills and knowledge do Saudi EFL teachers need to integrate technology effectively, Perceptions of Technology Use: How do teachers perceive the usefulness and ease of integrating digital tools in EFL classrooms (based on the TPACK and TAM frameworks)?, Barriers to Technology Integration: the challenges they face in integrating technology (e.g. lack of training, institutional support), and Professional Development Preferences: What are their preferences for ongoing training (e.g. online, hands-on workshops, community-based learning)? See Figure 1.

Some procedures were followed to check the questionnaire's validity and reliability, although it was for descriptive purposes rather than analytical. First, the questionnaire was built after consulting the literature, in which similar tools were applied such as TUPS and formatting its objectives. Before administrating the questionnaire several steps were taken to ensure its validity and reliability. Firstly, it was sent to two language learning experts for evaluation. Based on their evaluations, some corrections and changes were made. The following step was to conduct a pilot with a small group of Saudi EFL teachers to ensure clarity, relevance, and completeness. Thus, it was piloted with three EFL teachers to check the logical order of sections and the clarity of items. The questions were refined based on their feedback to improve the overall effectiveness of the survey. Furthermore, the Cronbach alpha was measured for only the 20 items in the last section of the questionnaire, excluding the last aspect, which is the needs for the future. On the Likert scale, it is 0.933.

The questionnaire consists of 40 items divided into five categories. The first section requested demographic information, including gender, age, highest degree obtained, years of EFL teaching experience, years of using technology in teaching EFL, and the institution name. The second section inquired about EFL university teachers' preparation for technology use, precisely their technology skills and how they acquire them. The third section explored EFL university teachers' use of technology in teaching, including the types of technology used in EFL teaching, the purposes for which they are used, and the challenges faced when using technology in EFL teaching. The fourth section focused on professional development and support in Saudi universities for technology use, including the frequency of professional development opportunities related to technology use in EFL teaching, types of professional development received, types of university resources, and barriers to accessing technology-



Source(s): Figure by the author

Figure 1. The questionnaire's final sections

based professional development. The last section delved into EFL university teachers' perceptions of professional development on technology use at their universities, using a five-point Likert scale to express their level of agreement from strongly agree to disagree, with a neutral option. This section evaluated five aspects: effectiveness, support and access, confidence and competence, effects on students' learning, and needs for the future. Each aspect was estimated using five items (see [Appendix 1](#)).

Procedures

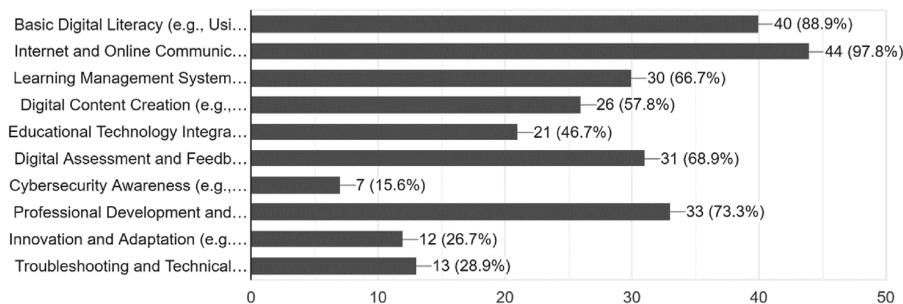
The study aimed to build the questionnaire with some piloting stages to collect valid and comprehensive insights from a large sample. The questionnaire was administered at the beginning of the academic year 2024. The researcher utilised their network to reach as many participants as possible, sending requests via WhatsApp, emails, and X platforms. The author asked willing participants to complete the questionnaire and share it with any EFL university teachers at Saudi universities they know. Data collection took about a month, with many attempts to encourage participants to complete the questionnaire. Although the author chose the time of data collection two weeks before the beginning of the academic year to avoid the busy times for teachers with work tasks, the response was so low for less than 20 participants. This was the reason for extending the time of the data collection stage and sending reminders via WhatsApp, email, and X platforms. The link to the questionnaire was sent to online groups of EFL teachers at Saudi universities. The response rates were low and slow.

Results

To address the first research question, the study aimed to assess the status of EFL teaching practices among Saudi university teachers concerning technology usage. The questionnaire was designed to gather descriptive data on several aspects, including the technology skills of EFL Saudi university teachers, how they acquired these skills, the types of technology they use in their teaching, and the purposes for which they use technology. Additionally, the study sought to investigate the challenges they encountered when integrating technology into teaching.

EFL Saudi University teachers and using technology in EFL teaching

According to the results of the questionnaire, EFL Saudi teachers assessed their knowledge of technology and skills. The most selected skills were Internet and Online Communication, Basic Digital Literacy, Professional Development and Collaboration, Digital Assessment and Feedback, and Learning Management Systems. While participants showed proficiency in various technology skills, they exhibited lower proficiency in innovation and adaptation (26%) and Cybersecurity Awareness (15%) (see [Figure 2](#)).



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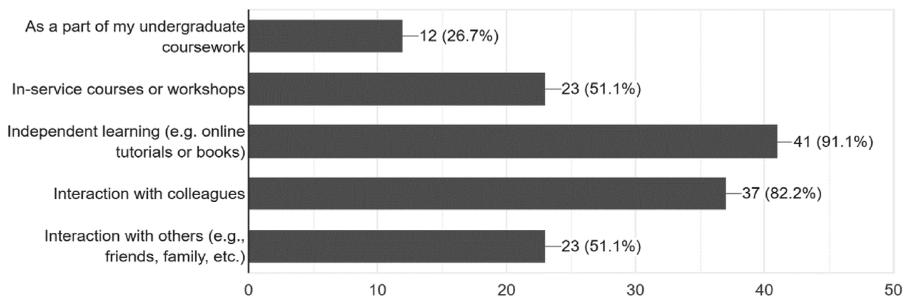
Figure 2. Kinds of technology skills EFL teachers have

Figure 3 illustrates how EFL Saudi university teachers acquire their technology skills. The most common methods were independent learning at 91% and colleague interaction at 82%. Notably, only 51% of the participants indicated that in-service workshops shaped their methods, with most preferring independent learning. Figure 4 shows the types of technology EFL teachers use in their EFL teaching. Learning management systems were used by all participants, followed by presentation software at 91%, online assessment tools at 77.8%, and video conferencing tools at 73.3%. Other types of technology, such as language learning software, language learning apps, and social media platforms, were used to a lesser extent by EFL teachers in their teaching.

Figure 5 highlights the various purposes for which EFL teachers utilise technology. These purposes include enhancing student engagement, conducting assessments, delivering instructional content, providing feedback, offering activities, facilitating student collaborations, and managing course content. However, supporting differentiated instruction is the least common purpose for utilising technology. Moving on to Figure 6, it outlines the challenges EFL teachers encounter when integrating technology into their teaching. The most common challenges are technical and student-related, followed by institutional challenges at 46.7%. EFL teachers' least common challenges when incorporating technology into their EFL teaching are personal challenges.

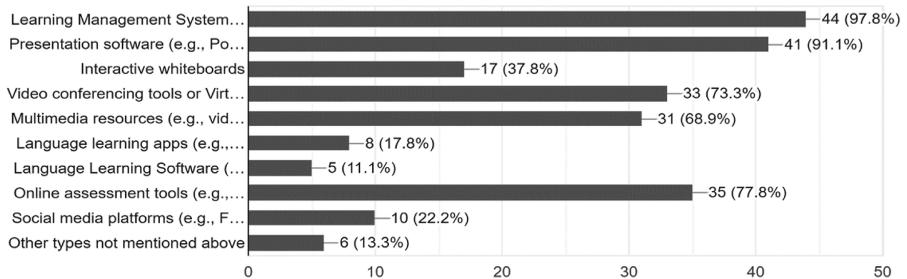
EFL Saudi University teachers' experiences of PD in technology integration into teaching

The third section of the questionnaire focuses on EFL Saudi university teachers' experiences of professional development opportunities offered by their universities regarding technology use in teaching. The results show that 51% of the participants indicated that their universities



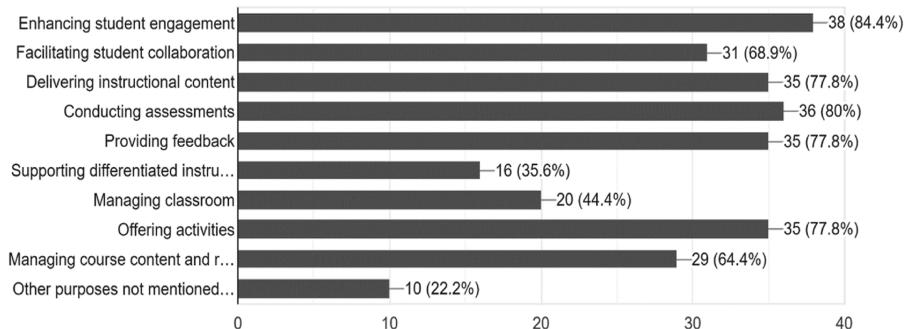
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Figure 3. Methods of acquiring technology skills



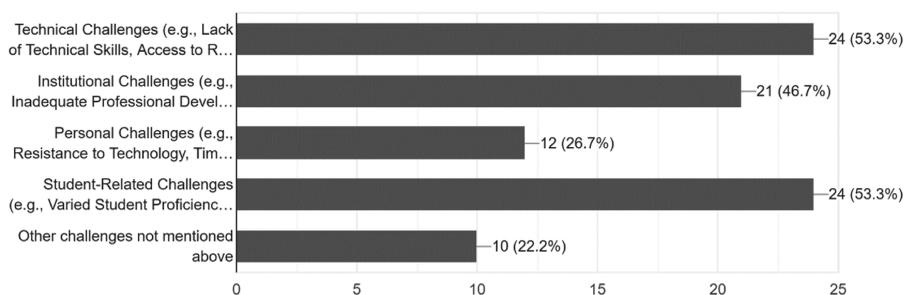
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Figure 4. Types of technology EFL teachers use



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Figure 5. Purposes to use technology in EFL teaching



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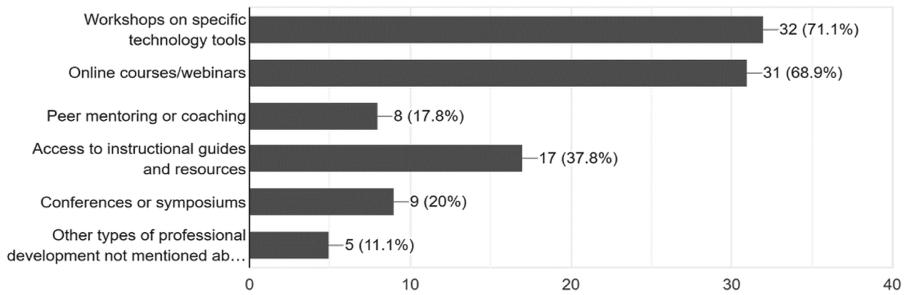
Figure 6. Challenges that EFL teachers face when using technology in their EFL teaching

provide regular professional development opportunities for technology use every semester. Additionally, 22% of the respondents stated that their universities offer occasional opportunities. In contrast, around 25% of the participants expressed a lack of professional development opportunities in their institutions. Figure 7 illustrates that workshops, followed by online courses or seminars, were the most common professional development opportunities. Peer mentoring, conferences, and instructional guides and resources were found to be the least common professional development opportunities. In Figure 8, the chart displays the types of resources universities offer to facilitate the use of technology in teaching. Most participants, approximately 60%, mentioned access to software and technical support as the most provided resources. This was followed by access to hardware at 44% and dedicated training sessions and online resource libraries at 37.8%.

Figure 9 shows the barriers that EFL teachers face in accessing professional development opportunities on technology use at their universities. Half of the participants face limited availability of relevant training, followed by 35.6% who refer to insufficient institutional support as a barrier to accessing professional development offered by their universities. Additionally, 22% of the participants consider financial constraints as a barrier to accessing professional development opportunities offered by their universities.

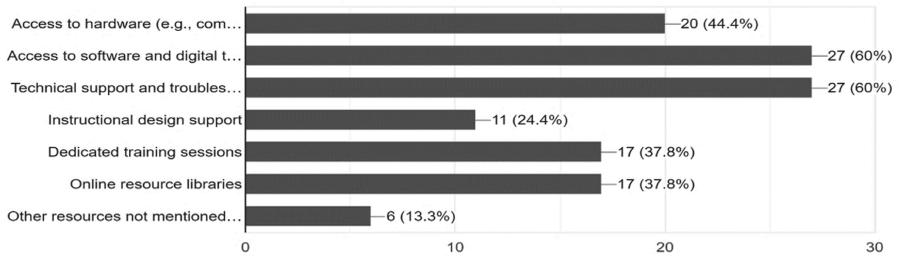
EFL Saudi University teachers' perceptions of PD in technology integration into teaching

Regarding the effectiveness of professional development opportunities offered at their universities for technology use, 62% of EFL teachers either felt neutral or disagreed with their



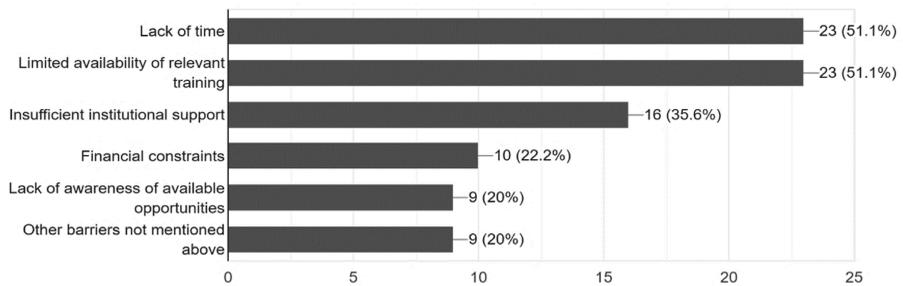
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Figure 7. Types of professional development EFL teachers received on the use of technology in their universities



Source(s): Figure by the author

Figure 8. Types of resources provided by universities to support the use of technology in teaching



Source(s): Figure by the author

Figure 9. Barriers EFL teachers face in accessing professional development in technology integration at their universities

effectiveness. 60% of the participants believe that the professional development programs offered at their universities for technology use are inadequate for mastering technology integration in teaching and are not tailored to their specific needs as EFL teachers as shown in Table 2 (see Appendix 2). Additionally, approximately 26.7% of the participants indicated that the professional development programs offered at their universities for technology use are not up to date. However, about a third of the participants chose this option due to the absence of professional development programs offered at their universities for technology use. This section of the questionnaire reveals various responses, from positive to neutral to negative.

Regarding EFL teachers' perceptions of access and support, approximately 50% of the participants can easily access professional development opportunities focused on technology integration at their universities. Only a third of the participants believe that their universities provide enough opportunities during the academic year to participate in professional development activities. Over 65% of the participants could not easily find professional development opportunities offered by their university that meet their needs regarding technology use in teaching. Furthermore, the percentage increased to 77%, confirming the lack of financial support for participating in external professional development programs related to technology use in teaching. While about 49% of them agree that their departments encourage and support continuous professional development in technology use, about 50% do not.

After participating in professional development, EFL teachers' perceptions of confidence and competence were examined. Participants confirmed their confidence and competence in using technology in teaching, troubleshooting fundamental technical issues, and utilising various technological tools. However, 60% of the participants expressed neutral or negative opinions. 62% of them emphasised the necessity of continuous professional development offered by their universities to maintain their competence in using technology effectively.

Regarding EFL teachers' perceptions of the impact of professional development on technology use and its impact on their students, approximately 46% agreed that participating in the professional development programs offered at their universities has had a positive effect on student engagement in their EFL classes, improved teachers' ability to assess students' learning through technology, and made their teaching more efficient and effective (items 16, 17, and 20). However, the remaining participants either held a neutral stance or disagreed with these aspects. Most EFL teachers were uncertain about the impact of professional development programs in technology use on developing their students' language skills and the impact of professional development programs on technology use for effectively differentiating instruction using technology (items 18 and 19). Additionally, about a third of the participants were not engaged in professional development that would positively impact their students.

EFL teachers expressed a strong need for training on specific software or applications for language teaching, workshops on integrating technology into EFL assessment practices, opportunities to collaborate with colleagues on technology use in teaching, advanced professional development programs on emerging technologies, and training to recognise unethical uses. Between 66 and 84% of participants agreed on these needs. Some participants, however, disagreed with these needs or were neutral.

Discussion

The purpose of the current study was to investigate the experiences and perceptions of EFL Saudi university teachers on the professional development in technology integration into their teaching offered by their Saudi universities. It was essential to examine the current situation of EFL Saudi University teachers and technology integration into their teaching in advance to understand their experiences and perceptions of professional development in technology integration into teaching. The study aimed to understand the technology skills of EFL teachers, how they acquire these skills, the purposes for which they use technology in their classes, and the potential barriers they face. The researcher sought a comprehensive understanding of the current situation by addressing these questions.

EFL Saudi University teachers and using technology in EFL teaching

The findings of this study indicate that most EFL teachers working in Saudi universities have a long experience in using technology and, therefore, have been empowered by a variety of

technological skills. This supports the assertion by Almalki that the EFL teachers at Saudi universities are not only technologically integrated but also confident in applying technology when teaching (Almalki, 2020). The teachers' technological proficiency stems primarily from independent learning and collaborative interactions with their peers, a factor noted in various educational contexts as a significant contributor to professional development (Ning *et al.*, 2015). The collegial environment fosters a shared learning culture, which is essential for enhancing teachers' technological competencies (Wiyono *et al.*, 2022). Despite their experience and skills, EFL teachers also face some problems, including technical issues and the students themselves. These problems would inhibit effective technology integration in educational settings.

EFL Saudi University teachers' experiences of PD in technology integration into teaching

Some of the study participants noted that professional development opportunities provided by their universities, such as workshops and online courses, were available, which are crucial for ongoing technology skills and knowledge enhancement. This discrepancy could be due to the varying approaches of universities in Saudi Arabia. Although the importance of preparation in encouraging teachers to use technology has long been acknowledged, the inconsistency in the availability of professional development opportunities could impact the use of technology by EFL teachers in Saudi universities.

According to the participants, limited access to such training opportunities constitutes a significant barrier. The findings also suggest that while access to software and technical support is high, the effectiveness of these resources is contingent upon the relevance and applicability of the training provided. The emphasis on tailored professional development programs that consider the unique contexts of EFL teaching is critical for fostering effective technology integration (Susanti *et al.*, 2023). As highlighted by Kianinezhad, understanding the multifaceted nature of teachers' attitudes towards technology is essential for designing effective support systems (Kianinezhad, 2023). In a nutshell, Saudi EFL teachers are at a commendable level of technological proficiency and willing to integrate technology into their teaching; however, overcoming the barriers regarding professional development and relevance and accessibility of training will be critical steps toward improving their teaching practices.

EFL Saudi University teachers' perceptions of PD in technology integration into teaching

The findings regarding the perceptions of EFL teachers in Saudi universities about professional development programs highlight several critical issues that need to be addressed to enhance professional development on technology integration in teaching. Most participants expressed dissatisfaction with the professional development programs' adequacy, indicating that these programs do not sufficiently equip them with the necessary skills for effective technology integration in their teaching practices. This sentiment aligns with previous research that emphasises the importance of tailored professional development that considers the specific needs of educators, particularly in the context of EFL teaching (Ahmad, 2023). Furthermore, the lack of up-to-date training resources was noted, suggesting a disconnect between current technological advancements and the training provided to teachers (Mansory, 2019; Al-Seghayer, 2022).

Access to professional development opportunities appears to be easy for most participants; however, the frequency and relevance of these opportunities are significant concerns. Many teachers reported that their universities do not offer enough professional development activities throughout the academic year, which is consistent with findings from other studies that highlight the need for continuous and accessible training for teachers (Almalki, 2020; Alghamdi, 2022). Additionally, the lack of financial support for external professional development programs further exacerbates the issue, limiting teachers' ability to seek necessary training to enhance their technological competencies (Oudah and Altalhab, 2018;

Alnujaidi, 2021). This situation underscores the necessity for universities to provide more frequent opportunities and ensure that these programs are adequately funded and aligned with teachers' specific needs (Susanti *et al.*, 2023).

EFL teachers' perceptions regarding professional development's impact on student engagement and learning outcomes were mixed. While some teachers reported positive effects on student engagement and improved assessment capabilities through technology, others remained uncertain about the overall impact on their students' language skills (Fitri and Putro, 2021; Tessema and Belihu, 2023). This variability in perceptions may stem from differences in individual teachers' experiences with technology and their pedagogical approaches, which suggests a need for more focused training on specific software and applications relevant to language teaching (Singh, 2018; Tessema and Belihu, 2023). Moreover, the call for collaborative opportunities among colleagues to share best practices in technology integration is echoed in the literature, indicating that professional development should foster a community of practice among educators (Fahd Aljuhaish *et al.*, 2020; Jamoom and Al-Omrani, 2021).

The findings reveal a pressing need for reform in the professional development programs offered to EFL teachers in Saudi universities. These programs must be tailored to meet the specific needs of teachers, provide ongoing and relevant training, and include adequate financial support for external opportunities. Additionally, fostering collaboration among teachers and focusing on specific technological tools will be essential in enhancing the effectiveness of these programs and improving student outcomes in EFL contexts.

Limitations and future directions

The current study's findings on the experiences and perceptions of EFL Saudi university teachers regarding professional development in technology integration reveal several critical limitations and areas for future research. The small sample size limits the generalisation of the results. Future research could include a quantitative follow-up study to explore whether the results apply to a larger sample. In addition, more correlation relations would be estimated if the sample was larger. Qualitative data would generate more valuable insights into the professional development of technology integration into teaching. The study participants were teachers who volunteered to complete the online questionnaire and interviews, and most of them had a higher proficiency level or a higher interest in digital technologies. Future investigations could involve EFL teachers in Saudi schools to determine whether the results apply to them. The results related to the teachers' abilities could be used to develop effective professional development opportunities in technology.

Implications for practice

The findings reveal several implications for practice that can enhance both teaching efficacy and learning outcomes. Firstly, the extensive experience and diverse technological skills possessed by EFL teachers are acquired through independent learning and peer interactions. However, the reliance on independent learning and peer interactions for skill acquisition indicates a need for structured professional development programs that are tailored to the specific needs of EFL university teachers. Furthermore, universities should consider implementing comprehensive training programs that not only focus on technical skills but also on pedagogical strategies for effective technology integration (Al-Seghayer, 2022). Moreover, while the availability of workshops and online courses is a positive aspect, the inadequacy of these programs in meeting teachers' specific needs points to a critical gap in professional development offerings. Institutions should thus prioritise the development of advanced training modules that address these specific areas, ensuring that EFL teachers are equipped with the necessary tools to enhance their teaching practices. Additionally, the

challenges faced by teachers, particularly concerning technical issues and student-related barriers, underscore the need for robust technical support systems within universities.

Furthermore, the lack of financial support for external professional development opportunities restricts teachers' ability to enhance their skills. Universities should explore funding options or partnerships that facilitate teachers' participation in relevant external training programs, thereby broadening their exposure to innovative teaching practices. The mixed perceptions regarding the impact of professional development on student learning outcomes and language skill development highlight the necessity for ongoing evaluation and adaptation of training programs. Continuous feedback from teachers can inform the development of more effective professional development initiatives that align with their teaching contexts and student needs (Ma'rifah *et al.*, 2021). This iterative process can help ensure that training remains relevant and impactful, fostering a more engaging learning environment for students. In conclusion, to maximise the potential of technology in EFL teaching, universities, by addressing these areas, can empower EFL teachers to effectively integrate technology into their teaching, thereby enriching the learning experience for their students.

Conclusions

The survey research aimed to investigate the current situation of EFL Saudi university teachers regarding technology integration into their teaching. It also explored the EFL Saudi university teachers' experiences and perceptions of professional development opportunities in technology integration into teaching offered by their universities. Research findings show that most EFL teachers have extensive experience, and a wide range of technology skills acquired mainly through self-directed learning and interactions with colleagues. However, they face challenges accessing professional development opportunities for technology integration in EFL teaching at their universities. Most believe the current professional development programs are inadequate and not tailored to their needs. While some teachers see a positive impact on student engagement and teaching efficiency, others are uncertain about the impact on students' language skills. Overall, EFL The results of this study can be valuable for policymakers, trainers, EFL teachers, and professional development experts, providing insights into the current state of professional development in technology integration at Saudi universities and helping them make better-informed decisions to improve teaching efficacy and learning outcomes. Teachers strongly need more specific training and support in technology integration.

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Supplementary material

The supplementary material for this article can be found online.

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