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Reforming English Language Education through ICT and E-Learning: A Comprehensive Review of Impacts on Student Learning

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Abstract

The purpose of this review is to examine the integration of Information and Communication Technology (ICT) and e-learning tools in English language teaching and analyze their impact on student learning outcomes. As digital technologies continue to evolve, educators are exploring innovative ways to enhance their teaching methods. This review synthesizes findings from various studies to assess how ICT and e-learning facilitate language acquisition, engage students, promote autonomy, and improve overall performance. The paper draws on empirical studies and pedagogical reports to evaluate the use of ICT tools in different teaching environments, highlighting the opportunities for increased engagement, interactivity, and access to authentic materials and feedback. While the use of ICT and e-learning tools has proven beneficial, their effectiveness varies depending on teaching practices, teachers' technological competence, and institutional support. The review also identifies challenges such as limited infrastructure and insufficient training, which can hinder the successful integration of technology. Ultimately, the review stresses the importance of thoughtful instructional planning, strong digital skills, and continuous evaluation to fully harness the potential of technology in language teaching, ensuring that digital tools align with pedagogical goals to create inclusive and sustainable learning experiences.

Keywords: Information and Communication Technology (ICT); e-learning; English language education; digital learning tools; learner engagement

1. Introduction

In today's world, the use of Information and Communication Technology (ICT) and e-learning has become increasingly important in education, transforming both how students

learn and how teachers deliver instruction (Eickelmann & Vennemann, 2017). In English language education in particular, digital tools have made learning more interactive, flexible, and learner-centred (Jeong, 2023). Recent studies have also highlighted how AI tools like ChatGPT can be integrated into creative writing and rhetorical analysis, enhancing both learning and engagement (Geng & Wei, 2024). Tools like online learning platforms, virtual classrooms, language apps, and digital assessments are now key parts of language learning and help students stay interested and involved (Jiang et al., 2021).

With the spread of globalization, in-demand job openings, and updated school curricula that require English language competence, language educators are searching for innovative ways to enhance instruction. The advantages of e-learning include access to authentic learning materials, self-regulated learning, immediate feedback, and interaction with various local and foreign English speakers. In lower-resource settings, educational technologies brought by e-learning improve teaching and make training more effective. Access to English language competence is especially important in educationally disadvantaged areas (Ihnatova, 2021).

One of the most noticeable changes in education occurring globally due to ICT is the transformation of foreign language education (Barakina et al., 2021). This includes changes in the foreign language education curriculum delivered across educational systems worldwide, supported by various technologies (Chang & Lan, 2021). These technologies have great potential to improve education (Gao & Shen, 2021). Described as enabling education anywhere, anytime, learners now have the ability to use language software, online language courses, digital dictionaries, and automated systems for instant feedback (Qureshi et al., 2021). With the increase in the number of learners, digital spaces in education meet communication needs through online video conference calls and social media (Velenti et al., 2022).

Despite the described advantages, integrating technology into English teaching presents several challenges. The digital divide (Biletska et al., 2021) remains a significant issue, as many educators lack the necessary digital skills to effectively use technology in their teaching. Furthermore, inadequate infrastructure in schools, such as unreliable internet connections and a shortage of digital devices, continues to be a major obstacle (Johnson et al., 2021). While the potential benefits of ICT in education, particularly in emerging applications of AI for text analysis (Geng & Nimehchisalem, 2023; Geng et al., 2025), are well documented, several studies highlight gaps in the literature. These include insufficient instructional planning to facilitate technology integration (Moorhouse et al., 2023), challenges in the systemic integration of ICT (Hashemi et al., 2022), and a lack of data on how ICT influences students' motivation and achievement (Shao et al., 2023). The uneven use of technology, compounded by these issues, underscores the need for a deeper understanding of ICT and e-learning in English language teaching.

Based on previous research, which highlights the impact of ICT and technology on students' language proficiency, motivation, autonomy, and academic outcomes (Nkomo et al., 2021;

Lacka & Wong, 2021), as well as the challenges and effectiveness of technology integration in the classroom (Tlili et al., 2021), this paper reviews the literature on the use of ICT in teaching English. It aims to bridge contemporary practices with these research findings, offering insights for teachers, decision-makers, and researchers to understand both the positive and negative aspects of technology in English teaching (Pinho et al., 2021). Additionally, the paper seeks to assist teachers in making informed decisions about technology integration and provides the tools necessary to create diverse and innovative educational environments.

2. Methods

2.1 Research Design

This review captures the effects, benefits, and challenges of using ICT and its integration into English language teaching and e-learning, based on the impact of a range of empirical studies, conceptual papers, and case reports spanning various educational contexts. Rather than conducting experimental studies, the purpose of this paper was to systematically organize and analyze preexisting research. Specific notable themes in the investigations included learner engagement, accessibility, teacher preparedness, digital competence, and implementation challenges.

2.2 Data Sources and Search Procedures

Focusing on education and applied linguistics, the researchers reviewed relevant peer-reviewed literature using the following databases: Google Scholar, Web of Science, Scopus, JSTOR, ERIC, ScienceDirect, SpringerLink, and others. The searches focused on the following terms: use of ICT in English language teaching, e-learning in English education, digital tools for ESL/EFL, technology in language classrooms, online English lessons, and mobile-assisted language learning (MALL). Boolean operators (AND/OR) were used to connect the keywords and narrow down the search results. Additionally, relevant research was found through the review of key research articles in the field.

2.3 Inclusion and Exclusion Criteria

To ensure academic robustness, this review had specific inclusion and exclusion criteria and very specific rules of engagement for passive frame content. Only peer-reviewed journals were counted, and even then, these had to be research, case study, or theoretical papers of specific pedagogical relevance. Most of the focus during this review was on articles published from 2020 to 2025 to embrace the recent advances in ICT and e-learning. Any study that integrated the use of ICT, e-learning, or digital tools of any sort in the classroom settings of ESL/EFL/ELT, involving primary or secondary school learners, university students, or teachers of English, was included. Certain study types were exempted to enhance focus and relevance. Given the limitations of access, documents that were not in English language were excluded. Any research study that had no relevance to English language pedagogy was excluded. This included ICT studies that were system-design papers without any educational application. General reports that outlined ICT policy

from a non-pedagogical viewpoint were also excluded, as were studies strictly focused on the learning of very young children, as these were found to fall outside the scope of English language education.

2.4 Data Extraction and Thematic Synthesis

The studies included after the screening stage were thoroughly reviewed in their entirety to extract relevant information, including the specific types of ICT or e-learning tools incorporated, the educational levels of the learners and the populations included, and the advantages associated with each study in language learning. In the literature review, the specific challenges and constraints, as well as teachers' digital competence and preparedness, learning outcomes, and motivation, were also considered. Having access to such information helped in appreciating the function and influence of ICT and e-learning in teaching English. The data were analyzed using a thematic synthesis approach, grouping studies into key themes such as the role of ICT in enhancing English language learning, the benefits of technology, available digital resources, and the challenges of ICT use. To ensure reliability and minimize bias, findings were cross-referenced from multiple peer-reviewed studies.

3. Results and Discussion

This section presents the results from the reviewed literature on the integration of ICT and e-learning tools in English language teaching (ELT). It synthesizes findings from multiple studies to highlight the role of ICT and e-learning in enhancing English language teaching and learning, the benefits they provide to students, and the challenges faced in their implementation. The section also discusses the effectiveness of ICT integration in improving language acquisition and the role of teacher preparedness in the successful use of digital tools in the classroom.

3.1 The Role of ICT and E-learning in Enhancing English Language Teaching and Learning

The integration of information and communication technology (ICT) and e-learning has positively impacted students' access to resources and engagement in English language teaching (ELT). As shown in Figure 1, ICT supports the teaching–learning process by enabling key functions such as diagnostic testing, instructional material development, developmental reasoning, psychological analysis, remedial teaching, and teaching evaluation. Websites, e-books, videos, podcasts, and other online resources and tools allow students to learn at their own pace in areas such as listening, reading, and vocabulary development (Dudar et al., 2021; Johnson et al., 2021). Unlike traditional methods, teachers can choose digital tools that are more flexible than physical textbooks. This is especially important for students from remote areas and/or areas that are educationally deprived, as it bridges classroom learning to real-life language use (Barakina et al., 2021). Various studies show that the use of educational technology apps containing interactive elements like games, videos, and quizzes—such as Kahoot!, Quizlet, and Duolingo—is motivating, especially

for children, and makes English language learning fun (Situmorang et al., 2023; Nikimaleki et al., 2022). Real-time interactive feedback is also possible through these tools, supporting the learning and retention of language skills (Jiang et al., 2021). Traditional teaching methods are slightly adjusted, and motivation for both teachers and students increases (Kumar et al., 2022).

Figure 1: Need for ICT in the Teaching and Learning Process

ICT provides students with various options for learning, such as visuals, audio, and manipulatives, so they can choose the best method for them. E-learning tools motivate students and track progress, allowing students to better control their learning, which can improve their confidence as a result (Parveen & Fatima, 2025; Bilki et al., 2022). This is especially beneficial for larger or mixed-ability classes, as it enables teachers to offer differentiated learning beyond their typical methods (Abass et al., 2021; Lo, 2023). Students can learn at their own pace, allowing them to review, practice, and access additional help and resources whenever needed, which is particularly helpful in large classes. For teachers, ICT aids in providing a blended learning approach, as well as offering distance communication with students, and assessing students with different tools. Teachers use tools such as videos, quizzes, and polls, as well as video-conferencing platforms like

Zoom or Microsoft Teams, to explain learning goals and provide structured, timely feedback, which was especially important during the pandemic (Gao & Shen, 2021; Parveen & Fatima, 2025). Even though teachers can modify and personalize their lessons, as well as develop different ways of assessing their students through ICT, its full potential will not be realized if it is seen merely as a 'tool' rather than an integrated aspect of teaching pedagogy. ICT can enhance experiential and communicative language interaction by using various platforms where students can practice their language skills, communicate with peers, participate in video conferences, and engage in collaborative writing with students from other countries, thereby adding a social dimension to L2 learning and speaking practice (Buragohain, 2023). Barriers such as a lack of access to necessary devices, unreliable Wi-Fi, and insufficient ICT pedagogical training for teachers can hinder its effective use. This may result in technology being merely 'used' without positively impacting student learning (Culduz, 2024). Table 1 summarizes the key impact areas of ICT and e-learning in English learning and provides representative tools/examples for each area.

Table 1: Impact Areas and Roles of ICT and E-Learning in Enhancing English Learning

Areas of Impact	**Roles of ICT and E-Learning**
Accessibility	Expands access to English learning regardless of time or location through online platforms (e.g., Zoom, Moodle), mobile apps, and YouTube.
Interactivity	Encourages active participation by using interactive tools and resources such as Kahoot, Quizlet, Padlet, and discussion forums.
Skill Development	Supports the development of all four language skills: reading, writing, listening, and speaking (e.g., listening: podcasts, videos; speaking: Skype, VoiceThread).
Motivation & Engagement	Increases learner motivation through multimedia, gamification, and real-time feedback (e.g., Duolingo, gamified quizzes, interactive videos).
Professional Development	Enables teacher training and professional development in ICT integration through MOOCs, webinars, and digital teaching communities.

In order to receive the greatest benefits from ICT education and e-learning, technology needs to find its balanced place within the educational ecosystem by supporting and not replacing pedagogy. Teaching staff need to receive adequate training, school infrastructure needs to be improved, and ed-tech needs to be compatible and aligned with the curriculum. If technology is properly integrated into pedagogical practice, ICT in English language education becomes functional. Students receive more learning opportunities, more learning

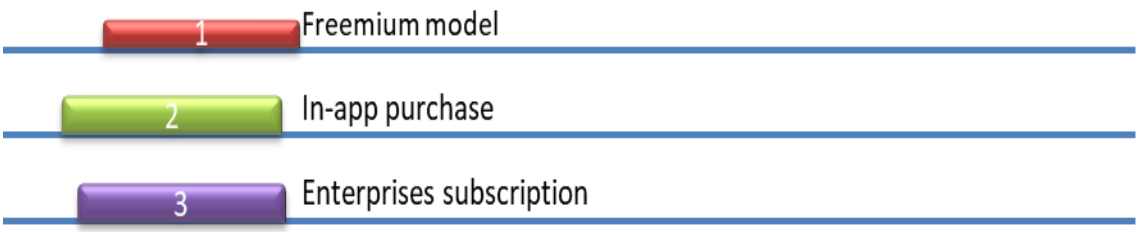
resources, and more interactive forms of learning and practice. However, schools must be prepared, students must have equal access to technology, and teaching staff must be supported and prepared.

3.2 The Benefits and Tools of ICT and E-learning Integration for Students

Implementing ICT and e-learning in English language education is advantageous and adds to the quality of education in several ways. Ease of access to numerous resources from any location at any time (e.g., videos, e-books, podcasts, online courses, and language apps) increases education's flexibility. According to Shao et al. (2023), this is particularly beneficial for learners in remote, isolated, or low-resource areas. Culduz (2024) also mentioned that ICT and e-learning technologies enhance the flexibility and accessibility of education, breaking down barriers and supporting lifelong learning, thus promoting equitable education. What's more, ICT tools encourage autonomous, self-paced learning, putting students in charge of their studies. They can review lessons, practice, and choose content they wish to focus on, allowing the learning process to be tailored to their individual preferences and needs. Several organizations adjust their exercises based on data collected during students' sessions, offering personalized experiences that center on self-paced learning and immediate feedback (Yuan et al., 2023). This flexibility is especially valuable in large or diverse classrooms where individualized teaching is difficult in traditional settings (Puri et al., 2025). The inclusion of interactive, gamified assessment elements and videos boosts students' engagement and enjoyment, while also improving retention of learning materials (Elaish et al., 2023). Ultimately, this personalized approach leads to better academic performance and greater self-confidence and self-efficacy for students.

In addition to these benefits, various ICT and e-learning tools (see Figure 2) have been incorporated into English language teaching, enhancing and complementing traditional teaching practices.

Figure 2: Monetization Techniques for Digital Language Learning Tools



Technology such as Duolingo, Rosetta Stone, Babbel, and Memrise enhances language learning through various forms of gamification and immersion techniques related to listening, speaking, writing, reading, vocabulary, and grammar. For tracking student progress, course outlines, and material distribution, teaching platforms such as Moodle, Google Classroom, and Blackboard help instructors streamline their courses. Resources

like YouTube, podcasts, and BBC Learning English are great for practicing listening and speaking, as well as getting familiarized with various accents and registers. SMART Board technology is useful for allowing lesson collaboration through both digital and non-digital means. In addition to digital tools, class discussions are managed through video conferencing platforms like Zoom, Microsoft Teams, and Google Meet. Language collaboration is integrated with teamwork and organizational skills through platforms such as Padlet and Trello, where students can also exercise their language skills. For interactive practice, game-based learning systems and speech recognition technologies are highly effective. When used properly, these tools provide a well-structured, flexible learning environment, optimizing the learning experience. For students engaged in e-learning and ICT, language education becomes more enjoyable and accessible with the use of technology.

3.3 The Effectiveness of ICT Integration in Enhancing English Language Acquisition Among Students

Digital technology enhances English teaching by making lessons more engaging and accessible, allowing students to learn independently through apps like Duolingo and YouTube, practice with interactive games, and receive instant feedback. With the help of technology, students can learn at their own pace and get immediate feedback, which helps maintain their motivation and keeps them actively involved in the learning process. Li (2022) found that incorporating learning technologies in the classroom significantly increased student motivation to learn English.

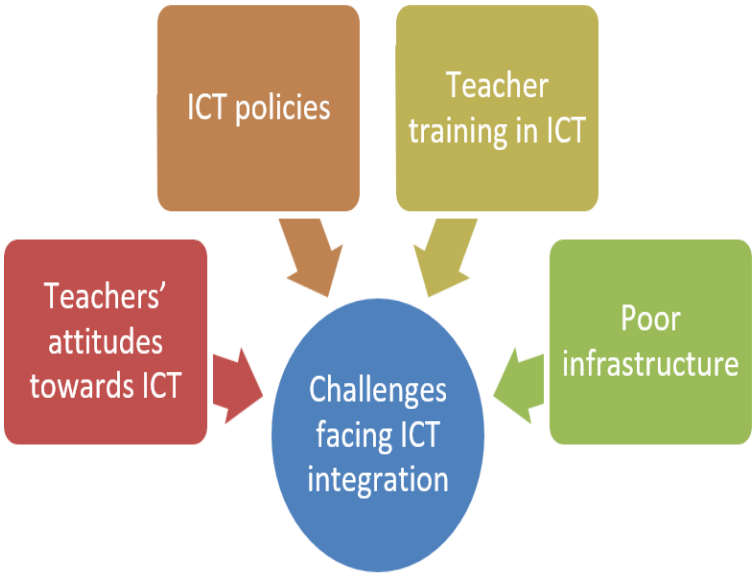
Despite the multiple benefits of ICT, we are still facing some challenges as ICT users face challenges of staying without technology, insufficient teacher training, and rigid ICT curricula (see Figure 3). To alleviate this gap, resources need to be made accessible, teachers need to be trained to incorporate ICT more effectively into the curricula, and teacher training needs to be coupled with more flexible digital-age appropriate ICT curricula. As shown in Table 2, ICT increases enjoyment and creates more opportunities for teaching and learning English, as well as higher efficiency. ICT also motivates learners, facilitates social connectedness, and provides multiple channels of communication. ICT made available to learn communicative competence in English is very important. Game of the language and ICT in English learning, and ICT in teaching/learning videos, create an active learning environment.

Table 2: Motivation and Learner Engagement in English Language Learning

Aspects	ICT Tools
Intrinsic Motivation	Learners engage for personal satisfaction, out of interest, or to achieve specific goals. Examples include language-learning games, storytelling apps, and Duolingo.

Extrinsic Motivation	Learners are motivated by external rewards such as grades, certificates, or recognition. Examples include badges, leaderboards, and certificates in apps (e.g., Babbel).
Social Interaction	Peer collaboration and community building increase learners' interest and engagement. Examples include discussion forums, group chats, and language-exchange platforms.
Multimedia Use	Audio-visual content improves attention and stimulates interest. Examples include YouTube videos, podcasts, and AR/VR tools for language practice.

Figure 3: Integration of ICTs in Teaching Languages



3.4 The Impact of Digital Literacy and Teacher Preparedness in the Adoption of E-learning Techniques

Education e-learning has surged in recent years. Particularly during periods when schools had no other choice but to conduct online teaching. Effective e-learning requires teachers to have good digital skills and the ability to utilize online tools. Digital competence encapsulates more than basic skills of operating a computer. It is the ability to integrate and utilize learning tools such as Google Classroom, Moodle, and Zoom. It is the ability to create relevant digital materials such as videos, podcasts, presentations, and other materials to assess online content for reliability, and to utilize pedagogical tools for lessons to be more interactive. Teachers with such abilities can create lessons that are more student-centered, motivating, and more aligned with the contemporary learning demands (Dang et al., 2024; Yuan et al., 2025). Table 3 summarizes the essential elements of digital competence that support teachers' adoption of e-learning techniques, linking each component to practical applications.

Table 3: Essential Elements of Digital Competence in E-Learning

Foundational Components	Applications
Digital Literacy	Basic ability to use computers, devices, and the internet safely and efficiently, including navigating LMS platforms, using web browsers, and operating digital tools.
Information Literacy	Ability to find, evaluate, and manage online information critically by researching reliable language sources and avoiding misinformation.
Communication Skills	Using digital tools to communicate clearly and appropriately in online settings, including email etiquette, video conferencing, and discussion boards.
Collaboration Online	Working effectively with others using digital platforms, such as collaborating in Google Docs, participating in group chats, and engaging in forums.
Pedagogical Integration	(For teachers) Skillfully integrating digital tools into teaching strategies, including creating interactive lessons with digital media.

Having motivated teachers and the use of the right digital tools for online learning go hand in hand. As illustrated in Figure 4, teachers' motivation to learn is influenced by factors such as professional development, policy accountability, teacher education, educational psychology, and adult learning, which in turn shape their willingness to adopt e-learning practices. Motivated teachers are likely to adopt new methods of instruction, increase student engagement, and continue learning the different technological tools for their classes. Teacher training must be two-fold: teaching methodologies and the use of digital tools. As stated by Osadchyi et al. (2021), and in most literature focusing on teacher training, teachers need to be equipped with the knowledge of how their students learn in an online environment, the use of videos and other multimedia, and the design of online collaborative activities to foster interaction among students.

Figure 4: Teachers' Motivation to Learn

According to the studies of Zou et al. (2025) and Stavermann (2025), teachers need assistance and consideration to adapt to new systems. Teachers must have access to technology to facilitate the transfer of knowledge in e-learning. They need to be digitally knowledgeable in e-learning to enhance educational systems, in accordance with Kiryakova & Kozhuharova (2024), to align with plans set at the national level. Once educational organizations require access to technology in educational systems to sustain e-learning and provide portable e-learning systems, technology must be integrated, as stated in Zhang (2025). Schools must be prepared for a more digital future, as e-learning depends on the motivation and capability of the teachers. Amemasor et al. (2025) state that once teachers acquire the necessary digital educational systems, motivation will lead to improved online education systems.

Good digital skills among trainers are a primary factor that facilitates the efficiency of the online training process (Domínguez-González et al., 2025). Lack of in-person teaching, with its spontaneity and most importantly, instant feedback, can hinder students from mastering learning materials. With the provision of remote instant messaging and dedicated email contacts, students can communicate asynchronously with remote teachers, even in different time zones. With the approaches of modern, motivational adult learning, educators support distance courses with discussion forums and students' active participation in

learning (synchronous and asynchronous) with quizzes and workshops. Educators can also modify their courses according to the needs of the students. Digital tools help create friendly and motivating learning environments and support students better. However, there can be more than just convenience. New tools can be prima facie disconcerting, more so when there are technological and inappropriate tools. Rather more than less, educational institutions should help build digital ecosystems to give educators and students the devices, tools, and training to use the tools interactively. Technologically competent and pedagogically trained teachers offer more engaging, effective, and comprehensive online learning (Ajani, 2024). As Larsari et al. (2023) show in their study on digital storytelling and gamification in EFL classrooms, teachers can enhance engagement and learning outcomes by using innovative methods like gamification, which encourages students to actively participate and collaborate in the learning process. For e-learning to work well for everyone, schools have to provide professional development for teachers, guarantee dependable technology and internet support, and build comprehensive support systems for both teachers and students. Table 4 presents the core methodological requirements for effective digital competence development, outlining the primary components, brief descriptions, and key actions for implementation.

Table 4: Core Methodological Requirements for Effective Digital Competence Development

Primary Components	**Descriptions**	**Key Actions**
Digital Competency	Ability to use ICT to find, evaluate, create, and communicate information	Navigate digital platforms (LMS, Zoom, Google Classroom); create multimedia; evaluate sources
Teacher Preparation	Educators' capability to use digital tools for effective teaching	Training in digital tools; understanding online pedagogy; and integrating multimedia
Educational Training	How teachers are taught and involved in online environments	Professional development courses: learning to create interactive lessons
Support System	Access to technical support, mentoring, and resources	IT support; mentoring; resource provision

Primary Components	**Descriptions**	**Key Actions**
Digital Infrastructure	Necessary material and technical base for digital learning	Equip schools with devices and reliable internet; reduce the digital divide
Effective Online Teaching	Teachers' creative integration of digital tools in pedagogy	Use interactive tools; provide real-time feedback; design engaging online courses
Student Engagement	Adapting strategies to encourage interaction and participation	Use discussion boards, quizzes, and live sessions; tailor educational strategies
Personalized Learning	Delivering personalized learning experiences for deeper student understanding	Use digital tools to customize content and feedback.
Equity and Access	Ensuring equal access to technology for all students and teachers	Invest in devices/internet; address technical barriers

Innovation in teaching the English language using ICT and e-learning still goes beyond the four walls of the classroom. Is the potential of the recent customizable digital tools optimizing the teaching experience and learning to the fullest? Is this e-learning experience tailored to the learners to the fullest? It is to answer these questions, this research uses the latest studies to assess the real impact of the use of ICT and e-learning in the teaching of English. Learning Management Systems (LMS), for example, Moodle, Google Classroom, and Blackboard, help teachers in streamlining their course instruction, resource dissemination, course monitoring, and communication. Feedback tools, like ProWritingAid, allow students to edit their writing more proficiently and receive feedback in real-time. Collaboration tools (e.g., Padlet, Google Docs, Slack) promote peer interaction, feedback, and active learning. Moreover, the use of multimedia, like YouTube and podcasts, exposes learners to authentic English, which augments their listening skills and cultural awareness (Kaunain et al., 2025).

3.5 E-Learning Strategies and Challenges in ICT-Based English Language Instruction

The use of modern teaching methods of Information and Communications Technology

(ICT) and e-learning has made English Language Teaching (ELT) more beneficial by creating active classrooms around the world. One of the best methods of ELT is blended teaching. In this model, students learn grammar in the classroom and use digital platforms to practice writing and speaking. Students get the opportunity to use digital tools such as Zoom, Skype, or Microsoft Teams to receive and give instant feedback for practice and manage speaking in large groups. Students also get to use real-life English videos and sound clips to improve their listening and speaking abilities. Their communication skills are also enhanced. Learning apps provide students with the motivation to learn. Students get flexible online platforms that allow them to learn at their own pace and receive instant feedback. For students in remote areas, the online model also provides them with the opportunity to learn flexible courses at their convenience. Unfortunately, the online model is not equally accessible to all students and offers no opportunities or technologies for some. Many teachers also lack sufficient training in ELT and refuse to change curricula for better use of technology and integrated teaching. These issues hinder the effective integration of technology with teaching methods.

While promising benefits are evident, barriers still exist to realizing the full potential of utilizing ICT in the teaching of the English Language. Some educators do not possess the needed training and ICT-based support, especially educators in understaffed and infrastructurally poor schools. In rural settings, the situation is worse with obsolete ICT facilities, poor ICT connectivity, and/or weak internet (Geng & Hassan Sain, 2023; Hassan Sain et al., 2024). On the other hand, some educators do not support the use of ICT in teaching. This is due either to the disuse of the tools, fear of added complexity, resistance to change, or an inclination toward conventional teaching approaches. In addition, heavy teaching workloads and added pressure from the other mentioned issues are exacerbated by the lesson preparations required for ICT. This is due to the technical problems that are always encountered in educational processes around the use of ICT.

These challenges can be addressed by incorporating ICT tools into updated and modernized school curricula, which, per digital pedagogy principles, should have the same educational goals as the offline components of the course. As Geng & Wei (2023) highlight in their study on the relationship between self-discipline and academic achievement in E-learning environments, fostering self-regulation among students is critical to the success of ICT integration. Their research emphasizes that students who demonstrate higher levels of self-discipline are more likely to engage with digital learning tools and manage their learning effectively in an online environment. This underscores the importance of providing not only the right technological tools but also the necessary support structures. For ICT initiatives to be sustainable and effectively transform English language teaching, strong political and administrative support, clear policies, financial backing, and collaboration between teachers, students, schools, and governments are essential to overcome challenges and engage all students in the learning process.

4. Conclusion and Future Research Directions

ICT and e-learning have transformed English teaching by making it more accessible, engaging, and tailored to individual needs. Tools like learning management systems, multimedia content, adaptive software, and online platforms help make lessons more effective and keep students engaged. When combined with effective teaching practices (Zhang & Wu, 2025), these technologies can increase student motivation, participation, and learning outcomes. However, challenges remain, such as unequal access to technology, insufficient teacher training, and limited integration of these tools into the curriculum, particularly in resource-poor areas. To gain the full benefits of these innovations, it is necessary to integrate conventional pedagogy with digital methodologies, improve teacher professional development and support, and ensure all students have equal access to the tools. Although technology does not replace face-to-face instruction, it provides a flexible, interactive, and inclusive way to teach and learn English. With the advancement of technology, its effect on the teaching of English has increased, particularly the role of AI tools that enhance the teaching of language skills, motivation, and cultural awareness. However, the effects of these AI tools on learners of varying ages, abilities, and socio-economic statuses are still not well understood. Future research should consider the impact of technology on learners' confidence, motivation, stress, and engagement, while also determining the effects of varying degrees of feedback, interactivity, and adaptive learning. Furthermore, the reliability and effectiveness of automated assessment, including digital portfolios and feedback, should be evaluated from the perspective of privacy, cost, cultural and contextual relevance, and language accessibility.

References

Abass, O. A., Arowolo, E. N., & Igwe. (2021). Towards enhancing service delivery in higher education institutions via knowledge management technologies and blended e-learning. *International Journal on Studies in Education, 3*(1), 10–21. https://doi.org/10.46328/ijonse.25

Ajani, O. A. (2024). Teachers' competencies in digital integration of learning contents in dynamic classroom practices: A review of teacher professional development needs. *Acta Educationis Generalis, 14*(3), 18-40.

Amemasor, S. K., Oppong, S. O., Ghansah, B., Benuwa, B. B., & Essel, D. D. (2025). A systematic review on the impact of teacher professional development on digital instructional integration and teaching practices. *Frontiers in Education, 10*, 1541031. https://doi.org/10.3389/feduc.2025.1541031

Barakina, A. V., Popova, S. S., Gorokhova, A. S., & Voskovskaya. (2021). Digital technologies and artificial intelligence technologies in education. *European Journal of Contemporary Education, 10*(2), 285–296.

Biletska, A. F., Paladieva, H. D., Avchinnikova, Y. Y., & Kazak. (2021). The use of modern technologies by foreign language teachers: Developing digital skills. *Linguistics and Culture Review, 5*(S2), 16–27.

Bilki, Z., Satar, M., & Sak, M. (2022). Critical digital literacy in virtual exchange for ELT teacher education: An interpretivist methodology. *ReCALL, 35*(1), 58–73. https://doi.org/10.1017/S095834402200009X

Buragohain, D. (2023). *Role of ICT in language learning: Advancing communication and cultural awareness*. *Journal of Language and Technology, 14*(2), 134-146.

Chang, M.-M., & Lan, S.-W. (2021). Flipping an EFL classroom with the Line application: Students' performance and perceptions. *Journal of Computers in Education, 8*(2), 267–287. https://doi.org/10.1007/s40692-020-00179-0

Culduz, M. (2024). *Benefits and Challenges of E-Learning, Online Education, and Distance Learning.* In L. E. Gray & S. Dunn (Eds.), *Incorporating the Human Element in Online Teaching and Learning* (pp. 1–27). IGI Global. https://doi.org/10.4018/979-8-3693-4131-5.ch001

Dang, T. D., Phan, T. T., Vu, T. N. Q., La, T. D., & Pham, V. K. (2024). Digital competence of lecturers and its impact on student learning value in higher education. *Heliyon, 10*(17).

Domínguez-González, M. Á., Luque de la Rosa, A., Hervás-Gómez, C., & Román-Graván, P. (2025). Teacher digital competence: Keys for an educational future through a systematic review. Contemporary Educational Technology, 17(2), ep577. https://doi.org/10.30935/cedtech/16168

Dudar, V. V., Riznyk, V. V., Kotsur, S. S., Pechenizka, O. A., & Kovtun. (2021). Use of modern technologies and digital tools in the context of distance and mixed learning. *Linguistics and Culture Review, 5*(S2), 733–750.

Eickelmann, B., & Vennemann, M. (2017). Teachers' attitudes and beliefs regarding ICT in teaching and learning in European countries. *European Educational Research Journal, 16*(6), 733–761. https://doi.org/10.1177/1474904117725899

Elaish, M. M., Hussein, M. H., & Hwang, G. J. (2023). Critical research trends of mobile technology-supported English language learning: A review of the top 100 highly cited articles. *Education and information technologies, 28*(5), 4849-4874. doi: 10.1007/s10639-022-11352-6

Gao, C., & Shen, H. (2021). Mobile-technology-induced learning strategies: Chinese university EFL students learning English in an emerging context. *ReCALL, 33*(1), 88–105. https://doi.org/10.1017/S0958344020000142

Geng, H., & Hassan Sain, Z. (2023, August 1). *Blended learning: A new challenge for Pakistani university students*. In *Malaysia International Conference on Languages, Literatures and Cultures (MICOLLAC 2023)* (pp. 46–49).

Geng, H., & Nimehchisalem, V. (2023). Can ChatGPT analyse textual data? The sub-themes reflected by typical conceptual metaphors in short stories of language assessment. *ASEAN Journal of Applied Linguistics, 2*, 16–31. https://ejournal.maal.org.my/asjal/article/view/9

Geng, H., & Wei, H. (2023). The relationship between self-discipline and academic achievement of Chinese undergraduate students in the E-learning environment. *Journal of Higher Education Theory and Practice, 23*(14), 117-126. https://doi.org/10.33423/jhetp.v23i14

Geng, H., & Wei, H. (2024). Exploring ChatGPT's capabilities in creative writing: Can GPT-4o conduct rhetorical move analysis in narrative short stories? *ASEAN Journal of Applied Linguistics, 3*, 44–59. https://ejournal.maal.org.my/asjal/article/view/18

Geng, H., Wei, H., Nimehchisalem, V., & Azar, A. S. (2025). Can ChatGPT analyze textual data? The case of conceptual metaphors in short stories of language assessment. *Journal of Language Teaching and Research, 16*(5), 1665–1672. https://doi.org/10.17507/jltr.1605.24

Hashemi, A., Si Na, K., Noori, A. Q., & Orfan, S. N. (2022). Gender differences on the acceptance and barriers of ICT use in English language learning: Students' perspectives. *Cogent Arts & Humanities, 9*(1), 1–20. https://doi.org/10.1080/23311983.2022.2085381

Hassan Sain, Z., Geng, H., & Song, Y. (2024). Impact of English language coaching classes in Pakistan: Bridging educational gaps and socioeconomic challenges. *Language, Technology, Society, and Media, 2*(2), 116–127. https://doi.org/10.70211/ltsm.v2i2.98

Ihnatova, K., Poseletska, D., Matiiuk, Y., Hapchuk, O., & Borovska. (2021). The application of digital technologies in teaching a foreign language in a blended learning environment. *Linguistics and Culture Review, 5*(S4), 114–127.

Jeong, K.-O. (2023). Integrating technology into language teaching practice in the post-COVID-19 digital age: From a Korean EFL context. *RELC Journal, 54*(2), 394–409. https://doi.org/10.1177/00336882231186431

Jiang, L., Meng, H., & Zhou, N. (2021). English learners' readiness for online flipped learning: Interrelationships with motivation and engagement, attitude, and support.

Language Teaching Research, 25(5), 1–22. https://doi.org/10.1177/13621688211027459

Johnson, C. U., Nkanu, A. L., & Udo. (2021). Checkmating the weaknesses associated with information and communication technologies in education for improved effectiveness and efficiency. *Journal of Education and Practice, 12*(8), 80–85.

Kaunain, S.N., Hasbullah, H., & Rahman, A.R. (2025). The Effectiveness of Podcast on YouTube as a Learning Media in Improving Students' Listening Skills. *International Journal on Advanced Science, Education, and Religion, 8* (1), 277-293.

Kiryakova, G., & Kozhuharova, D. (2024). The digital competences necessary for the successful pedagogical practice of teachers in the digital age. *Education Sciences, 14*(5), 507. https://doi.org/10.3390/educsci14050507

Kumar, S., Sharma, P., & Goyal, R. (2022). Gamification in language learning: A systematic review of the impact of gamified platforms on learner motivation and engagement. *Journal of Educational Technology & Society, 25*(4), 35–47. https://doi.org/10.1080/23311983.2022.2085381

Lacka, T. C., & Wong. (2021). Examining the impact of digital technologies on students' higher education outcomes: The case of the virtual learning environment and social media. *Studies in Higher Education, 46*(8), 1621–1634.

Larsari, V. N., Geng, H., & Vidal, J. (2023, July). Collaborative creation of digital storytelling-based task for EFL grammar acquisition: Using gamification and its effect on EFL sixth-grade students' learning in flipped, blended, and traditional classes. In *International Conference on Future of Education* (pp. 239-253). Springer Nature Singapore. https://doi.org/10.1007/978-981-97-4931-7_20

Li, B. (2022). Ready for online? Exploring EFL teachers' ICT acceptance and ICT literacy during COVID-19 in Mainland China. *Journal of Educational Computing Research, 60*(1), 196–219. https://doi.org/10.1177/07356331211028934

Lo, Y. (2023). Enhancing English teaching through blended learning: The role of ICT. *ELT Journal, 77*(1), 112–127.

Moorhouse, B. L., Kohnke, L., & Wan, Y. (2023). A systematic review of technology reviews in language teaching and learning journals. *RELC Journal, 54*(2), 426–444. https://doi.org/10.1177/00336882221150810

Nikimaleki, M., & Rahimi, M. (2022). Effects of a collaborative AR-enhanced learning environment on learning gains and technology implementation beliefs: Evidence

from a graduate teacher training course. *Journal of Computer Assisted Learning, 38*(3), 758–769. https://doi.org/10.1111/jcal.12646

Nkomo, B. K., Daniel, R. J., & Butson. (2021). Synthesis of student engagement with digital technologies: A systematic review of the literature. *International Journal of Educational Technology in Higher Education, 18*(1), 1–26.

Osadchyi, N. V., Valko, L. V., & Kuzmich. (2021). Using augmented reality technologies for STEM education organisation. *Journal of Physics: Conference Series, 1840*(1), Article 012027.

Parveen, R., & Fatima, S. (2025). Virtual classroom engagement: Tools for enhancing interactive teaching in English language classrooms. *Journal of Educational Research and Practice, 12*(1), 200–220.

Pinho, C., Franco, M., & Mendes, L. (2021). Application of innovation diffusion theory to the e-learning process: Higher education context. *Education and Information Technologies, 26*(1), 421–440.

Puri, B., Mushtaque, I., Fang, S., Chenhe, G., & Younas, A. (2025). The impact of mobile-based language learning on speaking and learning anxiety, engagement and achievement in Chinese language learning: The mediating role of cognitive load. *Acta Psychologica, 259*, 105400. https://doi.org/10.1016/j.actpsy.2025.105400

Qureshi, N., Khan, H., Raza, A., Imran, F., & Ismail. (2021). Digital technologies in Education 4.0: Does it enhance the effectiveness of learning? A systematic literature review. *International Journal of Interactive Mobile Technologies, 15*(4).

Shao, K., Kutuk, G., Fryer, L. K., Nicholson, L. J., & Guo, J. (2023). Factors influencing Chinese undergraduate students' emotions in an online EFL learning context during the COVID pandemic. *Journal of Computer Assisted Learning, 39*(5), 1465–1478. https://doi.org/10.1111/jcal.12791

Situmorang, K. M., & Simanjuntak, D. C. (2023). EFL teachers' perceptions of Kahoot as an online learning platform in promoting basic English vocabulary. *Journal of Languages and Language Teaching, 11*(2), 251–262. https://doi.org/10.33394/jollt.v11i2.7525

Stavermann, K. (2025). Online teacher professional development: A research synthesis on effectiveness and evaluation. *Technology, Knowledge and Learning, 30*(1), 203-240. https://doi.org/10.1007/s10758-024-09792-9

Tlili, J., Zhang, Z., Papamitsiou, S., Manske, R., Huang, H. U., & Hoppe. (2021). Towards utilising emerging technologies to address the challenges of using open educational

resources: A vision of the future. *Educational Technology Research and Development, 69*(2), 515–532.

Velenti, P. N., Puspita Ratri, D., & Urifah, U. (2022). Epals: Utilizing ICT to promote English language learning for young learners through global connection. *Education of English as a Foreign Language Journal, 5*(1), 35–47. https://doi.org/10.21776/ub.educafl.2022.005.01.05

Yuan, N., Yu, Q., & Liu, W. (2025). The impact of digital literacy on learning outcomes among college students: The mediating effect of digital atmosphere, self-efficacy for digital technology, and digital learning. *Frontiers in Education*, *10*, 1641687. https://doi.org/10.3389/feduc.2025.1641687

Yuan, Y., Harun, J.B., & Wang, Z. (2023). The effects of mobile-assisted collaborative language learning on EFL students' interpreting competence and motivation. *International Journal of Computer-Assisted Language Learning and Teaching (IJCALLT), 13* (1), 1-19.

Zhang, J., & Wu, Y. (2025). Impact of university teachers' digital teaching skills on teaching quality in higher education. *Cogent Education*, *12*(1), 2436706. https://doi.org/10.1080/2331186X.2024.2436706

Zou, Y., Kuek, F., Feng, W., & Cheng, X. (2025). Digital learning in the 21st century: Trends, challenges, and innovations in technology integration. *Frontiers in Education*, *10*, 1562391. https://doi.org/10.3389/feduc.2025.1562391