Technology's Influence on Learning English as a Foreign Language for Iraqi EFL Students

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Summary:

The fast-paced adoption of information and communication technology (ICT) in higher education has considerably impacted the global development of English as a Foreign Language (EFL) and second language (ESL) education. The essential objective of the current research paper is investigating the effects of technology on Iraqi university students' EFL learning. The study explores the impact of generic information and communication technology (ICT) equipment including computers, mobile phone, online learning resources and digital media on the acquisition of the four language skills: listening, speaking, reading, and writing. This study presents a mixed-method qualitative approach employing semi-structured interviews with EFL teachers and a validated Use of ICT Tools Questionnaire (Nagy and Habók, 2018, p. 212), for the quantitative analysis. Thus, Iraqi EFL students exhibit positive attitudes toward the use of ICT, where the perceived usefulness as well as usage ease are two major predictors of their level of engagement (and consequently achievement) based on language proficiency according to the findings of this study. Interviews indicated it is clear that instructors do think that ICT have an opportunity to foster student autonomy and communicative competence; yet they encounter challenges such as, the absence of institutional infrastructure and uneven digital literacy. The paper concludes by presenting evidence-based pedagogical frameworks to the use of technology and successful integration of technology in the Iraqi EFL context.

1. Introduction

Over the last 20 years, the use of technology in teaching English as a foreign language (EFL) across the world has changed pedagogical contexts. From computer-assisted language learning (CALL) to mobile-assisted language learning (MALL), learning management systems (LMSs) and applications driven by AI, technological integration has progressed from being an additional aid to foreign language learning towards becoming a fundamental part of it (Chapelle, 2003, pp. 1-2; Stockwell, 2016, pp. 296-307; Kessler, 2018, p. 205). Higher education has been transformed by the rapidly changing landscape of digital technologies in instructional delivery and the ways that students engage, pursue their own learning pathways, and get access to authentic language input (Reinders & Benson, 2017; Golonka et al., 2014, p. 70).

1.1 Technology and the Changing EFL Landscape

A constant global research consistently finds from around the globe evidence on the positive relationship between use of technology and English language proficiency, especially when integrating digital elements into the coherent pedagogical framework (Sailer et al., 2024, p.3; Mihaylova et al., 2022, p.13). The widespread popularity of online and hybrid teaching and learning environments has been accelerated during recent years due to the COVID-19 pandemic, which has forced educators to reconsider the purpose of technology that has been suggested as a mere supplement not only as an aid, but a replacement, not an optional tool to support language learning, when it should be introduced as a medium of proficiency, and for English language (Moorhouse & Kohnke, 2021). This shift has opened the door to a proliferation of authentic linguistic input via podcasts, YouTube, MOOCs, and social media platforms, and has expanded learning beyond the classroom for learners themselves (Warschauer, 2003). But, technological affordances do not equal better learning outcomes. It is well demonstrated that the

effectiveness of ICT integration relies on how teachers design the pedagogy, their digital competence, and their structure supports it (Teo, 2011, p. 2438; Granić & Marangunić, 2019). In the field of EFL education, this intersection of technological capacity with linguistic pedagogy determines how effectively learners acquire receptive and productive skills. In fact, receptive skills (e.g. reading and listening) benefit greatly from technology-mediated access to authentic materials (Vandergrift & Goh, 2012, pp. 18-20) while productive skills (speaking in particular) need interactive feedback-heavy environments, which are difficult to ensure for learners with low-resource settings (Kessler, 2018).

1.2 ICT in Developing and Arab EFL Contexts

In developing areas, especially in the Arab world, the infusion of ICT within EFL education offers both opportunities and challenges. Studies in such countries as Jordan, Saudi Arabia, and Egypt have also indicated favorable student opinions towards the integration of technology into EFL classrooms on the grounds of higher motivation, convenient access, and learner independence (Alshammari, 2020; Fathi and Rahimi, 2022, p. 4). However, systemic barriers including poor infrastructure, intermittent connectivity, and inadequate teachers' training still hamper application (Ebadi, 2023, pp. 115-116). In the Middle Eastern educational context, urban and rural institutions have different access to digital resources which leads to uneven exposure of students to technology-enhanced learning. In addition, many universities continue to promote conventional teacher-centered modes of pedagogy, where technology use is often restricted to presentation tools or supplementary exercises rather than integrated communicative tasks (Abdulzahra, 2022). These dilemmas are similar to universal concerns around the “pedagogical gap” between technology access and meaningful pedagogical integration (Kessler, 2018; Son, 2014, pp. 1-3).

1.3 ICT and English Language Learning in Iraq

In the past years, the integration of technology in the field of education in Iraq has become a national priority following reconstruction for a post-conflict Iraq and the digital transformation of higher educational institutions as per previous reports ((Yaseen & Saaed, 2023). The Ministry of Higher Education and Scientific Research (MOHESR) encourages universities digitizing their curricula, advancing blended learning, and adopting e-learning platforms. During and after the COVID-19 pandemic, Iraqi universities such as the University of Al-Qadisiyah, Hillah University, and Al-Muthanna University made a shift towards online or blended modes, where EFL students, teachers, and faculty were introduced to new teaching and learning technologies (Ebadi, 2023, p.115). In the Iraqi context, students' attitudes towards technology in EFL learning are generally positive, consistent with empirical research. As an example, Abdulzahra (2022) found that Iraqi university students positively viewed ICT as a motivational tool beneficial for both vocabulary acquisition and listening comprehension. In addition, ICT use increased the engagement and self-directed learning of learners in the study of Yaseen and Saaed (2023) but also highlighted some lasting barriers such as weak internet infrastructure, absence of institutional support, and absence of professional development for teachers. Despite this, although most Iraqi EFL students use cellular phones and online channels for vocabulary learning and pronunciation practice, classroom integration is still sporadic and unsystematic as a result of inflexibility in the course of syllabus and technological limitations. Taken together, these findings collectively emphasize the ambivalence of respectability and motivation that technology presents in EFL learning in Iraq, both promising in their motivational and accessibility benefits, yet constrained by infrastructural and pedagogical limitations. There is a paucity of studies that focus systematically on the potential of technology to affect all four language skills for Iraqi EFL learners in tertiary education, and most focus narrowly

on reading or vocabulary development. Relatively little attention has also been paid to the perceptual connection between students and instructors, for it can shed crucial light on the actual pedagogical importance of ICT in the Iraqi higher education context.

1.4 Research Purpose and Significance

The proposed study aims to investigate the role that technology plays in English as a foreign language learning by examining the four skills of listening, speaking, reading, and writing of Iraqi university students. With mixed-methods methodology, that is, using existing quantitative instruments (Nagy and Habók, 2018, p. 212) and interviews of teachers (adapted from Teo, 2011 and Kessler, 2018), the objective of the research work is to offer a multi-dimensional This requires an understanding of the students' attitudes as well as the instructors' perspectives. This research contributes to the domain of applied linguistics and educational technology in the following ways:

1. Empirically grounding evidence regarding EFL skills developed through technology in the under-studied national context.
2. Integrating student and teacher perspectives to capture alignment and divergence in ICT perceptions.
3. Applying the Technology Acceptance Model (TAM) to a higher education EFL context in Iraq with implications for theory and policy.
4. Generating practical insights for enhancing technology-supported EFL pedagogy, digital literacy, and institutional readiness.

Ultimately, this study aims to bridge the gap between global CALL scholarship and the localized realities of Iraqi higher education, where the promise of technology remains contingent upon infrastructure, pedagogy, and human agency.

2. Literature Review

2.1 Evolution and Meta-Analytic Evidence in CALL and EFL Technology Research

Computer-assisted language learning (CALL), technology-enhanced language learning, and many other fields of research have evolved from drill-and-practice software to wide-ranging studies of multimedia, mobile learning, LMS, and multimodal and social technologies (Chapelle, 2003; Hubbard, 2009). Recent reviews and meta-analyses show that interventions with technology tend to have beneficial effects on language learning outcomes, but the size of the effects or the locus of effects differs significantly according to technology type, learning target, and pedagogical design (Golonka et al., 2014; Moorhouse & Kohnke, 2021). A large number of second-order reviews of meta-analyses and meta-analytic evidence found an important positive effect in higher education that is digital technology led gains for learning in general but the impact also depends greatly on the instructional design and the features of the digital intervention (Sailer et al., 2024, p. 3). Mobile-assisted language learning (or MALL) has been one of CALL's most popular strands in this regard; several meta-analyses have reported moderate-large positive impacts on achievement outcomes when mobile applications are pedagogically aligned with learning objectives (Mihaylova et al., 2022, p. 13). These reviews highlight the fact that MALL appears particularly efficacious when tasks are well-scaffolded, in retrieval practice or spaced repetition contexts (e.g., vocabulary apps) and multimodal affordances (audio + text + interaction) are taken advantage of. Yet, meta-analyses also raise the issue of heterogeneity between studies and publication bias, which suggests that context-sensitive research designs are needed.

2.2 Differential Effects across the Four Macro-Skills

It is common in the literature that technology does not influence various skills evenly. Receptive skills (reading and listening) often do better with access to authentic, multimodal input: streaming audio, podcasts, subtitled videos, and extensive online texts provide valuable diversified exposure to support vocabulary learning and comprehension techniques (Vandergrift & Goh, 2012; Stockwell,

2016). Research on MALL and multimedia interventions find comparably large gains for listening comprehension with the use of audio-rich tasks used alongside interactive listening exercises (Li, 2021; Mihaylova et al., 2022).

In writing, digital tools offer affordances for revision, collaborative composition, and automated feedback (e.g., grammar checkers, peer-commenting in shared documents). Meta-analytic work in technology-mediated writing suggests positive effects on accuracy and fluency when instructional tasks incorporate iterative feedback cycles and teacher-mediated commenting (Golonka et al., 2014). For speaking, evidence is more mixed: synchronous communication tools (e.g., video conferencing, voice-recording tasks) can support oral fluency and pragmatic competence, but gains depend on opportunities for real-time interaction, sufficient bandwidth and audio quality, and performance-focused instructional sequencing (Kessler, 2018). Overall, the literature indicates that receptive skills often show clearer, more immediate benefits from ICT, whereas productive skills especially speaking require deliberate task design and reliable infrastructure to capitalize on technological affordances.

2.3 Instructional Design, Pedagogy, and Learning Gains

Across reviews, the decisive factor predicting successful technology integration is pedagogical design rather than mere presence of technology (Golonka et al., 2014; Sailer et al., 2024). Studies show larger learning gains when digital interventions are explicitly aligned with task-based language teaching (TBLT), incorporate interactional scaffolds (e.g., prompts, modeling, peer feedback), and are supported by teacher facilitation (Reinders & Benson, 2017, p. 561). Systematic reviews of technology-assisted language instruction stress the importance of combining face-to-face and online activities in blended models that leverage the strengths of each modality structured classroom practice for complex productive tasks and online

resources for individualized receptive input and self-paced practice (Warschauer, 2003).

2.4 Technology Acceptance Models and Learner Adoption

The Technology Acceptance Model (TAM) and its extensions (e.g., UTAUT, GETAMEL) remain prominent theoretical frameworks for understanding individual adoption of educational technologies. A systematic review of TAM in education concluded that perceived usefulness and perceived ease of use robustly predict behavioral intention and actual use across diverse educational settings (Teo, 2011; Granić & Marangunić, 2019, p. 15). More recent adaptations, such as the General Extended Technology Acceptance Model for E-Learning (GETAMEL), have been validated in multi-institutional e-learning contexts and have demonstrated that extended constructs such as self-efficacy, facilitating conditions, and subjective norms contribute meaningfully to predictive models of acceptance (Jiang et al., 2021). These findings motivate the present study's use of TAM as a parsimonious explanatory model while acknowledging the relevance of extended constructs (e.g., institutional support, digital literacy) for contextualized interpretation.

2.5 Teacher Professional Development, Digital Literacy, and Institutional Factors

More empirical and review studies are turning toward teachers as important mediators of the pedagogical implications of technology. Successful integration depends not just on the functional digital abilities but also on pedagogical digital competence, such as the skill to reformulate tasks, to assess learning in digital modalities, and to manage online engagement (Kessler, 2018; Teo, 2011). Systematic review of research on teachers and training and development suggest that professional development results in larger achievement if it is ongoing, practice-based and integrated in teachers' disciplinary contexts (Sailer et al., 2024). Indeed, at the institutional level, enabling conditions reliable infrastructure, technical support and policy incentives are repeatedly identified as enabling factors; their absence

creates persistent barriers in many developing-country contexts (Granić & Marangunić, 2019).

3. Methodology

3.1 Research Design

The study employed a convergent mixed-methods design (Creswell & Plano Clark, 2018). Both qualitative and quantitative data were used by the researcher to delve into the impact of technology on English learning of Iraqi EFL students. we adopted a mixed-methods approach that enabled triangulation between numerical trends in students' perceptions and rich context from instructors' experiences. This design is based on the premise that quantitative survey data alone might fail to capture pedagogical, infrastructural, and affective characteristics of technology use when employed in linguistically diverse and resource-poor environments (Dörnyei, 2021). On the contrary, qualitative data on its own may not be representative of the bigger picture trends in technology adoption and attitudes among large student populations. Integration of both forms of data is therefore a guarantee that the phenomenon can be analyzed in complementarity and validity (Greene, 2017; Mackey & Gass, 2021).

3.2 Research Questions

The study was guided by the following research questions:

1. What are Iraqi EFL university students' attitudes toward the use of ICT in developing their English language skills?
2. How do perceived usefulness and perceived ease of use predict students' engagement with technology in learning English?
3. What challenges and affordances do EFL instructors identify regarding the integration of ICT in university English instruction?
4. How do the quantitative and qualitative findings together explain technology's overall influence on EFL learning in the Iraqi higher education context?

3.3 Context and Participants

The study was carried out in three state universities of southern and central Iraq, Al-Qadisiyah University, Hillah University, and Al-Muthanna University, with different demographic, institutional, and infrastructural dimensions. These institutions were purposively identified based on established EFL programs and ICT integration levels.

3.3.1 Quantitative Phase (Students)

In the survey, a total of 312 undergraduate EFL students participated (196 females, 116 males). Participants were in the English departments of the Colleges of Education, aged between the ages of 18-24 years, M=20.6. The participants had undergone at least two semesters of EFL coursework and had some prior experience of using digital tools for language learning (such as mobile apps, online dictionaries, and social media).

3.3.2 Qualitative Phase (Instructors)

In the qualitative phase, 15 EFL instructors (8 males, 7 females) from the same institutions were studied. Their teaching experience ranged from 3 to 22 years (M = 11.4). All instructors had engaged in at least one online teaching semester during or after the COVID-19 pandemic, providing firsthand experience with ICT-mediated instruction.

This combination of participants enabled the study to capture both learner and teacher perspectives, a triangulation strategy widely recommended in recent mixed-methods EFL research (Paltridge & Phakiti, 2021; Greene, 2017).

3.4 Instruments

3.4.1 The Use of ICT Tools Questionnaire

The quantitative instrument was the Use of ICT Tools in Education Questionnaire developed and validated by Nagy and Habók (2018). The instrument consists of 32 items organized into four subscales:

1. Perceived Usefulness (PU) - 10 items

2. Perceived Ease of Use (PEOU) - 8 items
3. Motivation and Engagement - 8 items
4. Learning Outcomes - 6 items

Items were rated according to a five-point Likert scale from 1 = strongly disagree to 5 = strongly agree. The questionnaire has been widely used in several EFL as well as higher education contexts, showing good psychometric properties (Cronbach's α ranging from .82 to .91) (Nagy & Habók, 2018; Fathi & Rahimi, 2022). For the present study, the tool was modified a bit for context, replacing "school" with "university" and including examples of technologies used locally (e.g., Google Classroom, Zoom, Telegram). Testing was conducted with about 30 students from Al-Qadisiyah University. The obtained Cronbach's α of .89 demonstrated internal consistency reliability. Construct validity was determined using confirmatory factor analysis (CFA) with model-fit indices ($\chi^2/df = 2.18$, CFI = .94, RMSEA = .05), which supports the work of other researchers in the field of educational technology (Hair et al., 2022).

3.4.2 Semi-Structured Interview Protocol

The semi-structured format of the interview guide, as adapted from the Teo & Kessler model, was employed as the means of gathering the qualitative data. This was comprised of eight open-ended research queries centered upon the experience, attitude, and challenges of integrating ICT in the provision of EFL instruction as trainers. These were pilot-tested in an interview with two trainers, subsequently refined. Interviews were conducted in English or Arabic, as preferred, taking between 30-45 minutes. These were recorded, transcribed, and independently analyzed for themes using the Braun and Clarke six-step process to promote the validity of the findings.

3.5 Data Collection Procedures

Data was collected over a period of three months, ranging from February to April, the year 2024.

1. Phase One (Quantitative): The form was designed in a way that it could be filled either online, using google forms, where the campuses lack internet access, by hardcopy form. The form was anonymous.
2. Phase Two (Qualitative): After conducting quantitative data analysis, interviews were conducted with the instructors to explain emerging patterns and the potential pedagogical ramifications.
3. Integration Phase: The quantitative and qualitative findings were integrated at the interpretational phase to achieve complementarity and triangulation (Creswell & Plano Clark, 2018).

The studies' ethical approval was obtained from the participating universities' research ethics committees. The participants gave informed consent with the assurance of confidentiality and data protection to align with institutional and international research ethics protocols.

3.6 Data Analysis

Data Analysis is the process of systematically collecting, transforming, and modeling data to find out valuable information, classify patterns, and draw important results. It has different approaches, encompassing diverse techniques under a variety of definitions, and adopted in various natural, human and social sciences.

3.6.1 Quantitative Analysis

SPSS 28 and AMOS 24 were used to analyze data from the questionnaires. Overall attitudes toward ICT use were described using descriptive statistics (means, standard deviations). Pearson's correlations of perceived usefulness, ease of use, and engagement were conducted. A multiple regression analysis was utilized to evaluate TAM-based predictions about engagement and technology use. Within modern

standards in quantitative applied linguistics research (Dörnyei, 2021; Plonsky, 2022, pp. 10-12), assumptions for normality, linearity, and multicollinearity were examined prior to the analysis. Missing data <2% were treated by listwise deletion.

3.6.2 Qualitative Analysis

Thematic analyses of interview data were guided by Braun and Clarke (2008, p.87; 2021). Emerging themes from initial open coding included pedagogical affordances, implementation challenges, digital literacy, and student motivation. Through iterative comparison and peer debriefing, codes were distilled into overarching themes. NVivo 14 software made data management and coding uniform.

To enhance trustworthiness, Lincoln and Guba's (1985) criteria were applied:

- Credibility through member checking and triangulation with quantitative data;
- Transferability by providing thick descriptions of institutional contexts;
- Dependability via inter-coder reliability (Cohen's $\kappa = .83$); and
- Confirmability through audit trails and researcher reflexivity journals.

3.7 Integration of Quantitative and Qualitative Findings

This allows for effective integration of the results. In order to compile the results, the following was designed as the qualitative and quantitative result, a strategy that allows effective comparison of the results (2018 & Plano Clark, 2023). The result was that the qualitative result allowed the clear view of the result to be laid out to others, as the result was exquisitely set in the theme. For instance, interviews with interviewees revealing the uses of multimedia and online collaborative tools from the instructors added support to quantitative evidence around students wanting to learn. Similarly, our quantitative statistics showing perceived ease of use of education material was corroborated by reports of inadequate infrastructure and intermittent technical support. This joined up approach helped us to get a stronger sense of the subtle impact that technology has on the learning of English as a Foreign

Language (EFL), and adhere to the mixed-methods approach of applied linguistics (Paltridge & Phakiti, 2021; Greene, 2017).

3.8 Ethical Considerations

We followed ethical guidelines throughout the study. All data were collected after obtaining the adequate institutional approval and after the participants received the information sheets, specifically on the purpose of the research, their right to confidentiality, and the voluntary nature of their participation. There were no personal data collected, however. Consent was obtained during all interviews, and the participants were fully informed of the procedure. We saved the data securely on password-protected drives which made us report in an anonymized way. The study followed the ethical guidelines set forth by the British Association for Applied Linguistics (BAAL) in 2021, as well as the human subjects research standards outlined by the American Psychological Association (APA) in its 7th edition.

4. Findings

This section introduces the quantitative and qualitative findings, and then conducts an integrative analysis consistent with a mixed-methods design. Results are shared according to the four research questions. Where the quantitative results help provide statistical evidence of students' trends, the qualitative results lend interpretive depth in terms of the instructor stories.

4.1 Quantitative Findings

4.1.1 Descriptive Statistics

The first research question examined Iraqi EFL students' attitudes toward ICT use in developing their English proficiency. Table 1 summarizes mean scores and standard deviations for each subscale of the Use of ICT Tools in Education Questionnaire (Nagy & Habók, 2018).

Subscale	No. of Items	Mean (M)	SD
Perceived Usefulness (PU)	10	4.12	0.68

Perceived Ease of Use (PEOU)	8	3.95	0.71
Motivation & Engagement	8	4.24	0.64
Learning Outcomes	6	4.05	0.70

The extent to which respondents felt the role of technology in learning English as a whole had positive beliefs regarding findings (M = 4.09, SD = 0.68). The highest mean was achieved for Motivation and Engagement, indicating that the use of ICT significantly promotes learners' motivation and engagement in EFL tasks. This is consistent with prior research that suggested that technology boosts students' intrinsic motivation and learner autonomy in Middle Eastern EFL situations (Yaseen & Saaed, 2023; Fathi & Rahimi, 2022).

4.1.2 Correlations among TAM Constructs

Pearson's correlation analysis revealed strong, positive relationships among the TAM constructs.

Variable	1	2	3	4
1. Perceived Usefulness		.71**	.65**	.62**
2. Perceived Ease of Use	.71**		.58**	.60**
3. Motivation & Engagement	.65**	.58**		.74**
4. Learning Outcomes	.62**	.60**	.74**	

Note. $p < .01$ for all correlations.

These findings revealed a finding that students in which perceive ICT tools as useful and user friendly they were not only more motivated and reported better perceived learning outcomes, but also the outcome of they are easier to use. These results are in line with the Technology Acceptance Model (TAM) that aligns with and generalizes to previous empirical findings of educational technology (Granić & Marangunić, 2019; Jiang et al., 2021)

4.1.3 Regression Analysis

Multiple regression analysis determined if perceived usefulness (PU) and perceived ease of use (PEOU) were significant predictors of students' engagement in technology. The model was significant ($F(2, 309) = 54.72$, $p < .001$), with $R^2 = .48$. Each predictor made a unique contribution:

- PU ⟶ Engagement: $\beta = .49$, $t = 8.22$, $p < .001$
- PEOU ⟶ Engagement: $\beta = .37$, $t = 6.19$, $p < .001$

The model shows PU and PEOU explain 48% of the variance in engagement as a whole. Such a strong explanatory power is in agreement with TAM's assumptions (Teo, 2011), and with recent Iraqi EFL research findings, which indicated that perceived usefulness was the strongest predictor for students' intention to use technology in language learning (Ebadi, 2023).

4.1.4 Group Comparisons

A one-way ANOVA tested differentials between universities. The study found a strong institutional effect on the overall ICT use score, $F(2, 309) = 6.38$, $p = .002$. Tukey's Post-hoc (Tukey HSD) analysis conducted revealed that students at the University of Al-Qadisiyah ($M = 4.22$) scored higher than Al-Muthanna University ($M = 3.91$) and Hillah University had a small effect in the middle ($M = 4.08$). This difference may reveal varied levels of infrastructural support and training and administrative/public policies in ICT use, which further supports the contextual variation observed in Abdulzahra (2022) and infrastructural disparity reported recently in the regional research (Al-Ataby, 2020, pp. 323-325).

4.2 Qualitative Findings

4.2.1 Overview of Themes

Analysis of instructor interviews yielded four overarching themes, each with several subthemes:

1. Pedagogical Affordances and Skill Development

- ICT as an enabler of interactive, multimodal instruction
- Enhancement of receptive and productive skills through blended learning

2. Challenges and Barriers
   - Infrastructure deficits (connectivity, hardware)
   - Limited digital literacy and institutional support
3. Learner Engagement and Autonomy
   - Motivation through multimedia and social platforms
   - Shifting learner roles toward self-directed learning
4. Teacher Adaptation and Professional Identity
   - Evolving teaching roles and technology-mediated pedagogy
   - Need for sustained digital training and pedagogical reflection

These themes closely align with findings in comparable EFL settings (Kessler, 2018; Moorhouse & Kohnke, 2021).

4.2.2 Theme 1: Pedagogical Affordances and Skill Development

ICT tools namely multimedia presentations, online dictionaries, video conferencing, and mobile apps were more beneficial to classroom engagement, skill integration and skill interaction and enhanced that connection," said the teachers. Some of them said that exposing them to realistic, real sources through YouTube and online podcasts repeatedly made a world of difference in learning, both listening and in vocabulary. As one instructor noted:

"In classes I teach, students listen to different accents and real-life conversations, and it increases their pronunciation, and also comprehension. The combination of audio and visuals is something that textbooks cannot provide." This impression is echoed in recent research stating that multimodal exposure provides EFL learners with the necessary information about phonological awareness and pragmatic competence (Li, 2021; Stockwell, 2016). These results are in line with findings in previous studies. Writing and speaking were also positively affected as a result of group-based tasks

used in the project setting that required a digital (e.g. Google Docs peer review, WhatsApp voice notes). Nonetheless, the instructors cautioned that explicit feedback was still required on students' linguistic accuracy findings that matched global meta-analyses of technology-mediated writing (Golonka et al., 2014).

4.2.3 Theme 2: Challenges and Barriers

Though these were benefits, instructors commonly reported structural and pedagogical challenges. The most common roadblocks included poor internet connectivity, power interruptions, and limited access to institutional digital platforms. One instructor from Al-Muthanna University stated:

"Sometimes classes are disrupted by network problems, and students lose concentration. Without stable access, technology becomes a frustration rather than an aid."

Teachers also noted disparities in students' digital competence. Some highly adept, others struggling even with basic functions. This observation echoes work on the digital divide in Middle Eastern universities (Yaseen & Saaed, 2023; Ebadi, 2023, p. 115). Furthermore, insufficient institutional support and lack of technical training were often cited, highlighting the importance of professional development highlighted in teacher cognition literature (Kessler, 2018; Fathi & Rahimi, 2022).

4.2.4 Theme 3: Learner Engagement and Autonomy

Instructional ICT were the factor for motivating the learning and agent for learning autonomy of the student, particularly through platforms such as Telegram; and through different mobile learning applications. They selected to avail the access to content that was congruent with self-paced learning according to both constructivist theories and autonomous modes of learning (Reinders & Benson, 2017). One instructor reflected:

"Technology allows students to own what they are learning, they can explore the materials independently and come into class with specific questions." This is in

accordance with meta-analytic support that self-regulated learning is a mediating role in the relationship between technology use and achievement (Sailer et al., 2024). But some teachers also said that in the absence of clear pedagogical direction, students could participate only shallowly (via translation apps or whatever) and not develop deeper language competence.

4.2.5 Theme 4: Teacher Adaptation and Professional Identity

Teachers told us how integration has completely changed their teaching identities for the better. Teachers informed us that while technology had given them more educational tools, it also made lifelong learning necessary for them. One instructor told us:

"We're not only language teachers anymore-we design digital experiences. It takes creativity, and patience." This is consistent with cross national research into teacher dynamic professional identities in technology delivery (Moorhouse & Kohnke, 2021; Teo, 2011). Participants promoted ongoing provision of digital pedagogy experiences, namely those contextualized in the context of Iraqi higher education. Others also heard about a post-pandemic shift in expectations, students have come to expect blended modes of learning. This reflects world-wide trends in which COVID-19 has permanently changed the perception of online learning in EFL classes (Al-Ataby, 2020).

4.3 Integration of Quantitative and Qualitative Findings

The integration of data revealed three major cross-phase insights:

1. Consistent Positive Perceptions:

ICT promoted learning, motivated the students and improved their skills, which supported a high quantitative mean related to motivation and engagement (M = 4.24).

2. Structural Limitations as Moderating Variables:

Qualitative findings offer a frame for quantitative variation between universities: for example, differences in infrastructure and lack of training moderated perceived usefulness and ease of use.

3. Pedagogical Mediation:

The most effective approaches resulted in engagement and learning when ICT participation was integrated in pedagogically meaningful tasks combined with blended discussions, peer reviews, and multimedia-based assignments. This is compatible with recent models which emphasize pedagogical integration as the primary determinant of the success of technology (Golonka et al., 2014; Sailer et al., 2024).

4.4 Summary of Findings

To sum up, the data converge on the following points:

• Iraqi students studying English as a foreign language have a very positive attitude towards technology use in the learning process: they feel motivated to do it.

• The use of technology is most effective, but it is also easy, which aligns with what is theoretically recognized as the Technology Acceptance Model in this area.

• The success of using technology in education also depends to a large degree upon the school context and resources available and not all universities are so ready for the development of ICT.

• Feedback from lecturers reflects a paradox of optimism and worry - they see that technology will be used to enrich learning and at the same time are concerned about the need that it will result in digital expertise, good infrastructure, and skill in teaching methodologies.

• In general, these results indicate that the integration of technology has significantly transformed the level of English learning in Iraq yet that there is an urgent need to reconcile the educational infrastructure and the teaching methods in such way that their impact will last.

5. Discussion

5.1 Overview of the Study

This is a mixed methods study that examines the influence of technology on the study of English as a Foreign Language (EFL) among undergraduate students of University of Al-Qadisiyah, Hillah University and Al-Muthanna University of Iraq. Using the Technology Acceptance Model (TAM) as well as the existing CALL literature, the study evaluated the effect of perceived usefulness and ease of use on the students' use of ICT, related with technology impact on language learning in all four language skills as well as experience and meaning of technology mediated instruction by teachers. Taken together in this way, these findings revealed a strong positive feeling amongst Iraqi EFL learners towards the use of technology in language learning. Research data (including quantitative data (high average scores in the entire TAM elements), and qualitative data (enthusiastic teacher testimonies)) showed that ICT can engage motivation and skill development. But challenges of infrastructural and pedagogical environments persist, including disparities in digital literacy, lack of training and insufficient institutional support. These findings should also point to the fact that the efficacy of technology depends not just on its actual ubiquity, but to some degree on the pedagogical and contextual ecology in which technology appears.

5.2 Interpreting the Findings through the Technology Acceptance Model (TAM)

The quantitative study also validated the underlying assumptions in TAM that, students connect with ICT using PU and PEOU predictors. This correlates with findings from the general education context (Teo, 2011; Granić & Marangunić, 2019) and EFL (Middle East) practice in particular (Fathi & Rahimi, 2022, p. 4). The students who enjoyed use of, and enjoyed effective use with, the digital tools were also more motivated and self-managing, which shows the importance of a simple interface and pedagogical importance in the setting for technological design within

education. However, as Jiang et al. (2021) and Gao and Izadpanah (2023) explain, the TAM concept could lack sociocultural and affective dimensions of the use of technology. This concept is echoed in the current research's qualitative data, which suggests that the cultural orientation to authority, university norms, and peer influence also impact the adoption of technology. Some teaching staff noted that in some situations, student zeal could be counterbalanced by increased authority within institutions or erratic bureaucratic policy. The differences in contextual aspects are similar to extensions of TAM, such as GETAMEL (Jiang et al., 2021): an integrative model based on self-efficacy, subjective norms, and facilitating conditions.

5.3 Technology's Influence on the Four Macro-Skills

5.3.1 Receptive Skills: Listening and Reading

Receptive skills, with respect to technology, showed the greatest positive impact of any single factor of technology. Students benefited from authentic audio-visual exposure, which was delivered through podcasts, videos, and online reading materials, which improved listening comprehension and vocabulary learning. This is in agreement with what has been reported in Vandergrift and Goh (2012, pp. 18-20) and Mihaylova et al. (2022), which attribute increased input processing and comprehension to multimodal experience. Recent research by Li (2021) and Wang (2024) also establishes that listening platform interactivity accelerates perceptual fluency and top-down comprehension, especially if the listener could independently determine playback speed and repetition affordances often referred to by Iraqi instructors.

5.3.2 Productive Skills: Writing and Speaking

Writing and speaking improvements were noted, but more variable than in other occupations. Writing improved in collaborative platforms (Google Docs, WhatsApp). When it comes to speaking, synchronous tools (Zoom, Telegram voice chats) offered

additional practice, but the connectivity problem undermined the live interaction. Thus, there was a similar set of limitations identified in the Iranian and Jordanian EFL research studies as well, in which the reliability factor of the infrastructure remains imperative for the successful development of speaking proficiency as well (Al-Ataby, 2020; Ebadi, 2023). These research results prove the validity of the hypothesis that technology, while affording potential for the development of communication practice, requires pedagogy for achieving the necessary linguistic accuracy in relation to discourse proficiency as well (Reinders & Benson, 2017). In the absence of the instructor, it has been ascertained that the students can be vulnerable to the superficial level of involvement, similar to the constructivist CALL research study in which the work was contributed by Kessler, 2018; Sailer et al., 2024.

5.4 Pedagogical and Psychological Dimensions

The use of modern technology in the learning of EFL has greatly changed the traditional classroom setting because it provides learning aids that are crucial in the learning process.

5.4.1 Motivation, Autonomy, and Engagement

Student motivation was found to be the key factor. The result showed that the motivation variable was the most important factor in this scenario, as motivation scores in the quantative part contributed positively towards the instructors' observation of greater eagerness and self-directed learning. This can be related to Self-Determination Theory, which asserts that autonomy-supportive conditions enhance people's innate motivation, as mentioned in Deci & Ryan, 2000, page 234. Mobile applications, vocabulary gamification, as well as multimedia story animation, satisfied the psychological needs of autonomy, competence, as well as relatedness. The same has also transpired in current research, as there was a positive impact of mobile learning activities in the Arab EFL scenario, as identified in Yaseen & Saaed, 2023, as well as in Abdulzahra, 2022, where it was identified that there was a

positive impact but the presence of instructors was necessary to curb the concept of distractibility.

5.5 Implications and Recommendations

5.5.1 For EFL Teachers

- Implement technology in Task-Based Learning, where technology can support communicative tasks, problem-solving activities, rather than just drills.
- Raise the issue of digital literacy as literacy in the digital age based upon language literacy.
- Leverage existing platforms (e.g., Telegram, YouTube) pedagogically: Use social media as communication spaces rather than just information

5.5.2 For University Administrators

- Invest in the digital infrastructure, emphasizing the importance of bandwidth as well as classroom technology.
- Offer ongoing professional development, focusing on pedagogical as opposed to technical expertise.
- Resource allocation should include consideration of innovation in the use of digital technology.

5.5.3 For Policy Makers

- Develop a national strategy concerning the use of information communication technology in the area of linguistic education.
- Provide equal access to technology devices as well as internet connections, particular in rural settings.
- Network partnerships between TESOL and educational technology associations worldwide to promote capacity development and research collaboration.

These recommendations are in line with the international best practices for the use of technology in a sustainable manner, as laid out in (OECD, 2023; UNESCO, 2024).

6. Conclusion

One of the most important themes analyzed by this research has to do with the positive influence technology has on students' efforts to acquire the knowledge of the English language, specifically Iraqi EFL students. On the other hand, the topic of this research has to do with the context in which the acquiring of English as a Foreign Language skills takes place, in which the importance of the research based upon this topic has been made all the more clear. In the scenario where the students are well-aware of the workings of information technology, the technology promotes motivation in the process of acquiring the skills, the students can operate in an autonomous manner, and they can achieve success in every skill if the students as well as the information are well-learned, in addition to the adaptability of the instructors. Combining Technology Acceptance Model and Iraqi EFL scene is the importance of this study with the call for cultural as well as institutional change to guarantee the real effectiveness. From a pragmatic point of view, this work presents the education system and policymakers with resources, as we move from a position of supporting technology to serving as a "gateway for cutting edge" pedagogy. Moreover, whether longitudinal or experimental research designs can be adopted, it should also provide an opportunity for future research into the sustained effects of greater use of technology on both teachers' experiences of learning and teacher perceptions furthering our perceptions of what constitutes the Arab EFL environment. It would also allow us to compare it with other areas in Iraq and surrounding countries. The technology of EFL teaching in Iraq is a complicated matter which requires sensitive pedagogy, generous infrastructure and forward thinking, in this case thinking here about the English language at this time when digital connectivity is becoming widespread.

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أثر التكنولوجيا في تعلّم اللغة الإنجليزية كلغة أجنبية لدى الطلبة العراقيين

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الكلمات المفتاحية: تقنيات المعلومات والاتصالات، تعلّم اللغة الإنجليزية، نموذج تقبّل التكنولوجيا

الملخص:

أدّى الانتشار السريع لتقنيات المعلومات والاتصالات (ICT) في التعليم العالي إلى تأثير ملحوظ في تطوّر تعليم اللغة الإنجليزية كلغة أجنبية (EFL) على المستوى العالمي. يهدف هذا البحث إلى دراسة الأثر التكنولوجي في تعلّم الإنجليزية لدى طلبة المرحلة الجامعية في الأقسام الإنجليزية بجامعات عراقية، هي: جامعة القادسية، وجامعة الحلة، وجامعة المثنى. تستكشف الدراسة تأثير أدوات تقنية المعلومات والاتصالات العامة، بما في ذلك الحواسيب والهواتف المحمولة وموارد التعلّم عبر الإنترنت والوسائط الرقمية، في اكتساب المهارات الأربع الأساسية في اللغة الإنجليزية: القراءة والكتابة والاستماع والتحدث.

المنهجية: بالاستناد إلى نموذج تقبّل التكنولوجيا(TAM) ، يعتمد الباحثون منهجًا مختلطًا متزامنًا يجمع بين بيانات المسوح ذات الطبيعة الكمية والنوعية. وتتبع الدراسة مقاربة نوعية ضمن المنهج المختلط توظّف مقابلات شبه منظَّمة مع مدرّسي اللغة الإنجليزية، ومقاربة كمية تستخدم استبيان «استخدام أدوات تقنيات المعلومات والاتصالات» المُوثَّق .تُظهر النتائج أن طلبة الإنجليزية في العراق يتبنّون اتجاهات إيجابية نحو استخدام تقنيات المعلومات والاتصالات، حيث تُعدّ «المنفعة المُدرَكة» و«سهولة الاستخدام» متنبّئين رئيسين بمستوى انخراطهم (ومن ثمّ تحصيلهم) تبعًا لمستوى الكفاءة اللغوية. كما أشارت المقابلات إلى أن المدرّسين يرون في هذه التقنيات فرصةً لتعزيز استقلالية المتعلّم وكفاءته التواصلية؛ غير أنهم يواجهون تحدّيات مثل غياب البنية التحتية المؤسسية وتفاوت الثقافة/المهارات الرقمية. وتختتم الورقة بتقديم أطرٍ تربوية قائمة على الأدلة لاستخدام التكنولوجيا ودمجها بنجاح في سياق تعليم اللغة الإنجليزية في العراق.