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The Role of New Technological advances in Enhancing Iraqi EFL Students Listening Experience:

A B S T R A C T

The rapid integration of digital technologies in educational contexts has reshaped English language pedagogy worldwide, including in Iraq, where technology-supported instruction has gradually become part of higher education and secondary school practices. This study investigates the role of new technological advances in enhancing Iraqi English as foreign language (EFL) students listening experience, with a focus on students' perceptions, learning outcomes, and the effectiveness of digital tools such as mobile applications, learning management systems, online dictionaries, MP3 players, DVDs and multimedia resources. Employing a mixed-method design, data were collected from 120 university students through questionnaires, classroom observations, and semi-structured interviews. Quantitative results showed significant improvements in students' vocabulary acquisition, motivation, and listening comprehension when technological advances were integrated into instruction. Qualitative findings further revealed that learners perceived technology as supportive for autonomous learning, faster access to information, and enhanced interaction with English content. However, challenges related to limited infrastructure, inconsistent internet connectivity, and insufficient teacher training were also identified. The study concludes that technology can effectively enhance English language learning in the Iraqi context when pedagogically integrated and supported by adequate institutional infrastructure. Recommendations include professional development programmes for teachers, investment in digital facilities, and the adoption of blended learning models.

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دور التطورات التكنولوجية الحديثة في تحسين تجربة الاستماع لدى طلاب اللغة الإنجليزية كلغة أجنبية العراقيين

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الملخص:

أدى الدمج السريع للتقنيات الرقمية في السياقات التعليمية إلى إعادة تشكيل مناهج تدريس اللغة الإنجليزية في جميع أنحاء العالم، بما في ذلك العراق، حيث أصبح التعليم المدعوم بالتكنولوجيا جزءًا لا يتجزأ من ممارسات التعليم العالي والمدارس الثانوية. تبحث هذه الدراسة دور التطورات التكنولوجية الحديثة في تحسين تجربة الاستماع لدى طلاب اللغة الإنجليزية كلغة أجنبية في العراق، مع التركيز على تصورات الطلاب، ونتائج التعلم، وفعالية الأدوات الرقمية مثل تطبيقات الهواتف المحمولة، وأنظمة إدارة التعلم، والقواميس الإلكترونية، ومشغلات MP3 ، وأقراصDVD ، ومواد الوسائط المتعددة. باستخدام منهجية بحثية مختلطة، جُمعت البيانات من ١٢٠ طالبًا جامعيًا من خلال الاستبيانات، والملاحظات الصفية، والمقابلات شبه المنظمة. أظهرت النتائج الكمية تحسنًا ملحوظًا في اكتساب الطلاب للمفردات، ودافعيتهم، وفهمهم المسموع عند دمج التطورات التكنولوجية في التدريس. كما كشفت النتائج النوعية أن المتعلمين يرون في التكنولوجيا عاملًا داعمًا للتعلم الذاتي، وسرعة الوصول إلى المعلومات، وتعزيز التفاعل مع المحتوى الإنجليزي. ومع ذلك، فقد تم تحديد تحديات تتعلق بمحدودية البنية التحتية، وعدم استقرار الاتصال بالإنترنت، وعدم كفاية تدريب المعلمين. تخلص الدراسة إلى أن التكنولوجيا قادرة على تعزيز تعلم اللغة الإنجليزية في السياق العراقي بشكل فعال عند دمجها تربويًا ودعمها ببنية تحتية مؤسسية ملائمة. وتشمل التوصيات برامج التطوير المهني للمعلمين، والاستثمار في المرافق الرقمية، واعتماد نماذج التعلم المدمج.

الكلمات المفتاحية: التطورات التكنولوجية، التعلم اللغوي بمساعدة الأجهزة المحمولة، أنظمة إدارة التعلم، التعلم المدمج

INTRODUCTION

In the 21st century, the integration of technology into educational contexts has emerged as one of the most influential developments shaping the processes of teaching and learning. Across the globe, digital technologies have reshaped classrooms, transformed learning environments, and provided learners with unprecedented access to authentic language resources. English, regarded as the dominant global lingua franca, has benefitted greatly from such technological advancements. Technology has facilitated flexible, learner-centred, and interactive approaches to English Language Teaching (ELT), thereby offering new pedagogical possibilities that were previously unattainable in traditional settings (Stockwell & Hubbard, 2019).

Within the field of English as a Foreign Language (EFL), technological tools—ranging from multimedia platforms and language learning applications to online learning management systems—have been shown to enhance vocabulary development, listening comprehension, pronunciation accuracy, and overall communicative competence (Chapelle & Sauro, 2017). Digital tools offer EFL learners multiple opportunities for practice, interaction, and exposure to authentic materials, supporting autonomous learning and continuous engagement (Godwin-Jones, 2018).

However, the extent to which such potential is realised varies considerably across countries and contexts, particularly in developing regions where educational systems face infrastructural, economic, and political challenges. Iraq represents one such context. Although Iraqi higher education institutions have made notable progress towards integrating technology, challenges remain in terms of digital infrastructure, teacher preparation, and institutional support (Al-Kaabi, 2021; Al-Zubaidi, 2022).

Over the last two decades, Iraq has witnessed significant reforms in its education sector, aiming to modernise curricula and align instruction with international standards. English has been recognised as a critical subject for academic advancement, employment opportunities, and international communication. Consequently, calls for integrating technology into English language instruction have grown stronger. Iraqi universities have begun adopting digital platforms such as Google Classroom, Moodle, educational mobile applications, and online video resources, particularly after the COVID-19 pandemic, which accelerated the shift towards blended and online learning environments (Younis & Mahmood, 2022).

Despite these developments, research indicates that Iraqi university students continue to face limitations in accessing sophisticated digital resources and using them effectively for language learning. Poor internet connectivity, limited infrastructure, inconsistent availability of devices, and insufficient digital literacy among teachers pose significant challenges (Mahmood & Khalaf, 2021). Moreover, the actual pedagogical impact of technology on learners' proficiency and engagement remains underexamined, especially from an empirical standpoint involving both student and teacher perspectives.

This study therefore seeks to explore the role of technology in enhancing English language learning among Iraqi EFL students, using a case study approach based in a major public university. By adopting both quantitative and qualitative methods, the research aims to offer a comprehensive understanding of learners' perceptions, teachers' experiences, the frequency and types of technological tools used, and the challenges faced in integrating technology meaningfully into language teaching.

Although technology offers significant pedagogical benefits, its implementation in Iraqi EFL classrooms remains inconsistent and underutilised. Many university students report that they rely more on personal devices, mobile applications, and social media platforms for English practice than on formal technological resources provided by their institutions (Jamil, 2020). University instructors likewise acknowledge the potential of technology for language teaching but often lack sufficient training, institutional guidance, or confidence in using digital tools effectively (Al-Khazraji, 2020).

Moreover, existing research on technology-enhanced language learning in Iraq tends to focus on specific digital tools (such as, DVDs, MP3 player, and Web-based Listening libraries) or on general attitudes toward technology, often relying exclusively on small-scale surveys. There is a lack of comprehensive studies that combine multiple data sources—such as questionnaires, interviews, and classroom observations—to provide an integrated understanding of how technology is used and perceived in actual classroom contexts.

Thus, the central problem addressed in this study is the gap between the potential of technology to enhance English language learning and the realities of its implementation and

utilisation in Iraqi higher education. This research seeks to determine how technology is actually being used, what benefits it offers to learners, what obstacles hinder its effective integration, and how students and teachers perceive its role within the EFL context.

The overall aim of this research is to examine the role of new technological advances in enhancing Iraqi EFL students listening experience within a university context. Specifically, it investigates students' perceptions of the effectiveness of technology in supporting their learning; identifies the digital tools and technological resources used by students and teachers in EFL instruction; explores teachers' attitudes, experiences, and practices regarding technology integration in the English classroom; examines the challenges that impede effective use of technology in Iraqi EFL contexts; and assesses the extent to which technology contributes to improvements in students' listening skills, including vocabulary, grammar, and listening comprehension,.

The study is guided by the following research questions:

1. How do Iraqi EFL students perceive the role of technological advances in enhancing their listening experience?
2. What digital tools and technological resources are most frequently used by EFL students and teachers in the university context?
3. What are teachers' attitudes and experiences regarding the use of technology in EFL instruction?

LITERATURE REVIEW

Theoretical Frameworks

2.1.1 Constructivist Learning Theory

Constructivism posits that learners actively construct knowledge through interaction with their environment, rather than passively receiving information. Modern implementations of constructivism emphasise learner autonomy, discovery learning, and the importance of meaningful engagement with content (Fosnot & Perry, 2016). Technology enhances constructivist learning by providing interactive environments, multimedia resources, and opportunities for self-directed learning (Mishra & Koehler, 2009).

Digital tools such as language learning applications, videos, and online platforms enable students to control the pace, sequence, and nature of their learning experiences. In EFL contexts, constructivist approaches encourage learners to engage with authentic language input and build communicative competence through technology-supported interactions.

2.1.2 Sociocultural Theory

Rooted in the work of Vygotsky (1978), sociocultural theory emphasises the role of social interaction, cultural tools, and mediation in learning. Language development occurs through meaningful communication within a social environment. Technology functions as a cultural tool that mediates interaction and expands learners' opportunities for communication, collaboration, and problem-solving.

Digital platforms such as discussion forums, video conferencing tools, and collaborative writing applications facilitate socially mediated language learning. Researchers argue that technology provides learners with expanded opportunities for participation in target-language communities, even outside the classroom (Lantolf & Thorne, 2006).

2.1.3 Computer-Assisted Language Learning (CALL) Theory

CALL research has evolved over four decades, moving from drill-and-practice software to sophisticated multimedia environments. Levy and Hubbard (2020) note that contemporary CALL emphasises learner autonomy, task-based learning, interactivity, and feedback. The integration of technology in EFL classrooms is rooted in CALL principles, which advocate the use of computers and digital tools to complement and enhance language instruction.

CALL theory also highlights the importance of evaluating pedagogical effectiveness, technical usability, and learner engagement (Chapelle, 2001). These concepts guide the analysis of digital tools used by Iraqi learners.

2.1.4 Technological Pedagogical Content Knowledge (TPACK)

The TPACK framework proposed by Mishra and Koehler (2006) emphasises the intersection of technological knowledge, pedagogical knowledge, and content knowledge. Effective technology integration requires teachers to understand not only how to use digital tools, but how to apply them pedagogically to teach specific content.

In Iraqi universities, teachers often lack digital pedagogical knowledge, highlighting the relevance of TPACK to the present study (Al-Kaabi, 2021).

2.2 Technology in Language Education

The integration of technology into language education has grown significantly in recent decades. The widespread availability of the internet, smartphones, and multimedia tools has transformed traditional EFL classrooms into more dynamic and interactive environments.

2.2.1 Multimedia and Authentic Input

Multimedia resources, such as videos, animations, and audio recordings, expose learners to authentic language use and cultural contexts. Research shows that exposure to authentic materials improves listening comprehension, vocabulary development, and pragmatic awareness (Gilmore, 2007).

Digital videos, especially through platforms like YouTube, enhance learners' ability to process natural speech and understand contextualised meaning (Sydorenko, 2010).

2.2.2 Technology and Learner Autonomy

Technology supports autonomous learning by offering flexible, self-paced environments. Learners can:

- access content anytime and anywhere
- choose resources suitable to their level
- receive instant feedback
- track their progress

Little (2018) emphasises that autonomy is a critical component of successful language learning, and digital tools offer fertile ground for its development.

2.2.3 Motivation and Engagement

Studies consistently show that technology increases motivation and engagement among EFL learners. Gamified applications, interactive tasks, and multimedia activities make learning enjoyable and reduce anxiety (Reinders & Benson, 2017). Motivation, in turn, is strongly linked to improved learning outcomes (Dörnyei & Ushioda, 2020).

2.3 Mobile-Assisted Language Learning (MALL)

The increasing availability of smartphones has facilitated MALL, a subfield of CALL focused on mobile technologies. Mobile applications such as Duolingo, Memrise, and Quizlet provide personalised learning pathways, vocabulary practice, pronunciation exercises, and interactive tasks.

2.3.1 Advantages of MALL

Research identifies multiple benefits:

- improved vocabulary acquisition (Burston, 2015)
- enhanced listening and speaking skills
- increased exposure to authentic English
- flexibility and convenience
- opportunities for micro-learning

MALL is particularly useful in contexts with limited access to traditional resources, such as developing countries.

2.3.2 Limitations of MALL

Challenges include:

- distraction from non-academic mobile use
- small screen size
- limited internet access
- varying digital literacy

These issues are highly relevant in Iraq, where technological constraints remain significant.

2.4 Learning Management Systems and Online Platforms

Learning Management Systems (LMS) such as Moodle, Blackboard, and Google Classroom have become widely used in educational institutions. They facilitate the distribution of materials, submission of assignments, quizzes, feedback, and communication.

During the COVID-19 pandemic, LMS platforms became essential for remote learning worldwide (Hodges et al., 2020). In Iraq, the pandemic accelerated LMS adoption in universities, though challenges persisted (Younis & Mahmood, 2022).

LMS benefits include:

- improved communication
- centralised learning materials
- teacher monitoring of student progress
- increased learner autonomy

However, in developing countries, their implementation is often hindered by poor internet connectivity and inconsistent usage among teachers.

2.5 Technology and Specific English Language Skills

2.5.1 Vocabulary Learning

Digital flashcards, e-dictionaries, and vocabulary apps enhance memorisation and retention. Research shows significant improvements in vocabulary acquisition when learners use apps like Quizlet (Li & Hafner, 2020).

2.5.2 Listening Skills

Online videos, podcasts, and audio materials expose learners to authentic accents and natural speech. Listening comprehension improves with repeated exposure to multimedia (Vandergrift & Goh, 2012).

2.6 Technology in EFL Classrooms in Developing Countries

In many developing countries, technological integration remains partial. Studies from the Middle East, Africa, and South Asia highlight persistent challenges such as:

- unreliable electricity
- slow internet
- limited availability of devices
- lack of digital literacy

Despite these challenges, students generally express strong interest in using technology for English learning (Alshammari, 2020).

2.7 Technology Integration in Iraq

Research on technology in Iraqi education reveals both progress and persistent limitations.

2.7.1 Positive Trends

- Increased use of mobile apps for vocabulary learning (Jamil, 2020)
- use of digital storytelling to improve speaking (Abbas, 2021)
- growing familiarity with online learning platforms post-pandemic (Younis & Mahmood, 2022)

2.7.2 Challenges

- poor internet connectivity
- shortage of digital equipment
- inconsistent institutional policies
- lack of teacher training (Mahmood & Khalaf, 2021)

2.7.3 Teacher and Student Attitudes

Studies show:

- students exhibit high motivation to use technology
- teachers recognise its value but feel unprepared
- digital tools are used more outside the classroom than inside (Al-Khazraji, 2020)

2.7.4 Research Needs

There is a need for:

- mixed-methods research
- classroom-based observations
- studies linking technology use to learning outcomes
- research addressing institutional and infrastructural challenges

METHODOLOGY

3.2 Research Design

A **mixed-method** approach was adopted for this research. The mixed-method approach combines quantitative and qualitative data collection and analysis to develop a comprehensive understanding of the phenomenon under investigation (Creswell & Plano Clark, 2018). The combination of quantitative and qualitative data is essential because quantitative data obtained from the questionnaire provide measurable patterns of students' attitudes, technology use, and perceived benefits, while qualitative data from interviews and classroom observations offer detailed and contextualised insights into teachers' experiences, students' engagement, and actual classroom practices; together, the integration of both types of data strengthens the validity of the findings and enables a more comprehensive and holistic understanding of technology-enhanced learning

3.3 Research Context

The study was conducted at a major public university in Baghdad, Iraq. The institution offers four-year undergraduate English language programmes with compulsory modules in linguistics, literature, and language skills. Although technological infrastructure has improved in recent years, challenges such as limited internet connectivity, outdated devices, and lack of training continue to affect teaching and learning.

English is taught as a foreign language, with students having limited exposure to the language outside the classroom. Consequently, technological tools, particularly mobile applications and multimedia, play a crucial role in providing access to authentic input.

3.4 Participants

Two groups of participants were involved:

3.4.1 Students

- **Total number:** 120 undergraduate EFL students
- **Age range:** 18–23
- **Levels:** First-year to fourth-year students
- **Gender:** Both male and female students participated

Students were selected because they represent the primary users of technological tools for language learning and offer valuable perspectives on digital practices and challenges.

3.4.2 Teachers

- **Total number:** 10 English language lecturers
- **Experience:** 5–20 years of teaching
- **Specialisations:** Applied linguistics, language skills, translation, and literature

Teachers were selected to explore their attitudes, experiences, and challenges related to integrating technology into EFL instruction.

3.5 Sampling Technique

A **purposive sampling** technique was employed. This method was appropriate because the study required participants who were actively engaged in English language teaching and learning and had experience with technological tools.

3.6 Research Instruments

Three key instruments were used:

1. **Student Questionnaire** (quantitative)
2. **Semi-Structured Teacher Interviews** (qualitative)
3. **Classroom Observation Checklist** (qualitative)

3.6.1 Student Questionnaire

The questionnaire consisted of **26 items** divided into four sections. It was designed using a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). The questionnaire aimed to measure perceptions, frequency of technology use, perceived effectiveness, and challenges.

Table 3.1 – Structure of the Student Questionnaire

Section	Focus	Number of Items	Description
A	Demographic information	4	Age, level, gender, device access
B	Frequency of technology use	6	Frequency of using apps, LMS, videos, etc.
C	Perceived Effectiveness	10	Impact on vocabulary, listening, speaking, etc.
D	Learning autonomy and motivation	6	Self-directed learning, confidence, engagement

The questionnaire was adapted from validated instruments used in previous CALL and MALL studies (Stockwell & Hubbard, 2019).

3.6.2 Semi-Structured Teacher Interviews

Interviews were conducted with 10 teachers to explore their experiences, attitudes, and challenges. Semi-structured interviews allow flexibility while maintaining thematic consistency.

Table 3.2 – Interview Guide: Main Themes and Sample Questions

Theme	Description	Sample Questions
Use of technology	How teachers incorporate digital tools	“Which technological tools do you use most frequently?”
Perceived benefits	Pedagogical advantages	“How does technology enhance students’ language learning?”
Training and support	Professional development	“Have you received training in technology integration?”
Future recommendations	Suggestions for improvement	“What support do you think would enhance digital teaching?”

Interviews lasted 20–30 minutes and were audio-recorded with permission.

3.6.3 Classroom Observation Checklist

Classroom observations were conducted in six classes over three weeks. The checklist focused on actual use of technology, student interaction, and teacher strategies.

Table 3.3 – Observation Checklist Categories

Category	Description
Use of digital tools	Use of videos, apps, LMS, smartboards
Student engagement	Participation, motivation, collaboration
Teacher strategies	Instructions, scaffolding, feedback
Interaction types	Teacher–student, student–student, student–technology
Classroom environment	Infrastructure, connectivity, device availability

Observations provided contextual depth beyond self-reported data.

3.7 Validity and Reliability

3.7.1 Validity

Content validity: Established through expert review by three specialists in applied linguistics and CALL.

Face validity: Pilot-tested with 10 students to ensure clarity.

Construct validity: Items reflect theoretical constructs (e.g., motivation, proficiency, autonomy).

3.7.2 Reliability

Reliability was tested using **Cronbach's Alpha**.

Table 3.4 – Reliability of Questionnaire Sections

Section	Cronbach's Alpha	Reliability Level
Frequency of use	0.82	High
Perceived effectiveness	0.87	High
Autonomy and motivation	0.84	High

The questionnaire demonstrated strong internal consistency.

3.8 Ethical Considerations

Ethical procedures included:

Obtaining approval from the university's research ethics committee.

Informed consent from all participants.

Assurance of confidentiality through anonymised data.

Right to withdraw at any time.

Secure storage of data for research purposes only.

Participants were informed that the study posed no risk and that their responses would not affect academic standing.

3.9 Data Collection Procedure

Data collection followed several steps:

1. **Preparation Phase**

   Designing instruments

   Securing ethical approval

   Pilot testing

2. **Quantitative Phase**

   Administering questionnaires during regular class sessions

   120 students completed the questionnaire

3. **Qualitative Phase**

   Conducting face-to-face interviews with 10 teachers

   Audio recording and transcription

   Conducting six classroom observations over three weeks

4. **Data Management**

   Data was transcribed, coded, and backed up securely

   Quantitative and qualitative data stored separately to maintain clarity

3.10 Data Analysis

3.10.1 Quantitative Data Analysis

The questionnaire data were analysed using **SPSS 26**. The following statistical procedures were used:

Descriptive statistics (mean, standard deviation, percentage)

Frequency distribution

Cross-tabulation to compare variables such as gender and frequency of use

The results of the quantitative analysis will be presented in Chapter Four.

3.10.2 Qualitative Data Analysis

Qualitative data from interviews and observations were analysed using **thematic analysis** (Braun & Clarke, 2013). The analysis involved:

1. Familiarisation with the data (reading transcripts)
2. Coding segments of meaning
3. Grouping codes into themes
4. Reviewing and refining themes
5. Interpreting findings in relation to the literature

Themes focused on perceived benefits, challenges, digital competence, and classroom realities.

RESULTS AND FINDINGS

4.1 Introduction

The results of the quantitative and qualitative data collected for the study, that were obtained from 120 Iraqi EFL students through a questionnaire, 10 EFL teachers through semi-structured interviews, and six classroom observations, are organised thematically according to the research questions and the structure of the instruments. Quantitative results, which obtained through the questionnaire, are shown first, followed by qualitative analyses, and then an integrated summary.

4.2 Quantitative Results (Student Questionnaire)

The results of a total of 120 valid questionnaires were analysed using SPSS, through descriptive statistics (mean, standard deviation, percentage), are presented for each in a major section.

4.2.1 Students' Access to Technology

Table 4.1

Students' Access to Digital Devices

Device Type	Frequency	Percentage (%)
Smartphone	118	98.3%
Laptop	74	61.7%
Tablet/iPad	29	24.2%
Desktop computer	15	12.5%
No device	0	0%

(N = 120)

Interpretation of the obtained data: all students who participated in the study revealed that they rely heavily on smartphones for English language learning, highlighting the importance of mobile-assisted language learning (MALL) in the Iraqi context.

4.2.2 Frequency of Technology Use

Students rated their frequency of using technology for English learning (1 = never, 5 = always).

Table 4.2

Frequency of Technology Use for Learning English

Item	Mean	SD	Interpretation
Using mobile apps (e.g., duolingo, Hello English)	4.128	0.89	High usage
Watching YouTube lessons	4.381	0.74	Very high usage
Using online dictionaries	4.516	0.62	Very high usage
Using LMS platforms (Google Classroom, Moodle)	3.892	0.94	Moderate-high
Using social media for English	4.223	0.81	High
Using Zoom/online classes	3.435	1.02	Moderate

Interpretation Table 4.2: Students who participated in the current study showed that they frequently use technology for informal learning (YouTube, dictionaries, apps) more than for institutional platforms (LMS, Zoom).

4.2.3 Perceived Effectiveness of Technology

Table 4.3

Technology's Perceived Effectiveness on EFL Skills

Skill/Area	Mean	SD	Level
Improving vocabulary and grammar	4.47	0.68	Very high
Improving listening comprehension	4.33	0.71	High

Interpretation of Data in Table 4.3: The strongest perceived benefit is vocabulary improvement which was very high, as well as improving listening comprehension benefit was high.

4.2.4 Technology and Learner Autonomy

Table 4.4

Technology's Role in Promoting Autonomy and Motivation

Item	Mean	SD	Interpretation
Technology makes learning more enjoyable	4.29	0.77	High
Technology increases motivation	4.18	0.85	High
I can learn English independently using technology	4.10	0.90	High
I set personal learning goals using technology	3.71	1.03	Moderate

Interpretation of data in Table 4.4: Many of the students who participated in the current study feel that technology allows them to learn autonomously, more enjoyable, and motivated, although goal-setting is still weak.

4.3 Qualitative Results

Qualitative data from teacher interviews and classroom observations were analysed thematically. Four major themes emerged.

4.3.1 Theme 1: Technology as a Facilitator of Engagement and Motivation

Teachers consistently reported that technology increases student engagement as well as motivates students to learning English.

Sample quotations from the interview:

> *"Students participate in more active way when I use videos or I use interactive applications."* (Teacher 3)

> *"Technology or technological advances always brings real-life content into the classroom hall, which motivates students to perform better."* (Teacher 7)

Observation confirmation:
In five out of six of the observed classes in the current study, we observed that students showed higher participation during video-based activities in the classes.

4.3.2 Theme 2: Technology Enhances Language Input and Practice Opportunities

Teachers always emphasised and primarily reported that technological advances provide more exposure to English than other pedagogical instruments that can be used in the classes.

Sample quotations:

> *"Listening skills always can improve rapidly when students use technological advances tools such as, YouTube or podcasts."* (Teacher 1)

> *"Pronunciation and grammar practice through such applications which are used in the classes is much more effective than textbooks alone or traditional ways."* (Teacher 4)

Observation data showed that:

> We observed that the Teachers who participated in the current study used audio/video materials in four out of six observations as well as students also used mobile phones for dictionary checks in all observed classes.

4.4 Classroom Observation Findings (Summary Table)

Table 4.6

Summary of Observation Findings

Category	Observed Frequency	Summary
Using of digital tools	Effective in 5 out of 6	Mostly videos, dictionaries, and PowerPoints
Student engagement	High in 4 out of 6	Stronger during tech-based tasks
Teacher strategies	Effective in 5 out of 6	Scaffolding and instructions were clear
Interaction	Moderate in 3 out of 6	Mostly teacher-student; little student-student
Infrastructure issues	Moderate in 3 out of 6	Internet and equipment problems noted

(N = 6 Classes)

DISCUSSION, CONCLUSION AND IMPLICATIONS

5.1 Introduction

This chapter discusses the findings presented in Chapter Four by relating them to the existing literature on technology-enhanced language learning (TELL) and mobile-assisted language learning (MALL). The results are interpreted according to the research questions, highlighting the ways in which technology facilitates English language learning among Iraqi EFL students. The chapter also presents pedagogical implications, limitations of the research, suggestions for future studies, and the overall conclusion.

5.2 Discussion of Major Findings

The discussion is structured around the main components of the research:

1. Students' access to and frequency of technology use
2. Perceived effectiveness of technology
3. Learner autonomy and motivation
4. Teachers' perspectives and classroom observations

5.2.1 Students' Access to Technology

The quantitative results showed that nearly all students (98.3%) own smartphones, while laptops are moderately accessible. This confirms that mobile phones are the primary tool for English learning in Iraq. The findings align with Stockwell (2022) and Kukulska-Hulme (2020), who argue that mobile devices provide flexible access to language input and micro-learning opportunities.

In the Iraqi EFL context, where institutional digital infrastructure remains limited, mobile devices compensate for the lack of computer labs and unreliable electricity. This supports Ally (2019), who asserts that mobile learning is especially beneficial in low-resource environments.

Interpretation

Students' strong reliance on smartphones suggests that MALL should be formally integrated into the Iraqi EFL curriculum. The high penetration of mobile technology represents a key opportunity for expanding technology-based learning.

5.2.2 Frequency of Technology Use

Students reported high frequency of using YouTube, online dictionaries, and learning apps. Institutional tools like LMS platforms were used moderately.

These results echo those of Shadiev and Yang (2020), who found that informal digital tools are often more impactful than formal digital learning environments in developing countries.

Interpretation

Students in Iraq are more engaged in self-directed, informal digital learning rather than structured LMS-based learning. The lack of institutional training and support may be part of the reason.

5.2.3 Perceived Effectiveness of Technology

The findings show that technology significantly supports vocabulary learning, listening skills, pronunciation, and engagement. This supports previous studies such as:

- **Nation (2019)** on multimedia vocabulary acquisition
- **Gilakjani (2020)** on the positive impact of videos on listening skills
- **Derwing and Munro (2015)** on pronunciation improvement through audio modelling

However, writing showed the lowest perceived improvement. Teachers also reported rarely using technology for writing instruction, consistent with Al-Ani (2021), who found that Iraqi EFL teachers lack specialised training in digital writing tools.

Interpretation

- Strong improvement in receptive skills (vocabulary, listening)
- Moderate improvement in productive skills (speaking, writing)

  This indicates an imbalance in how technology is utilised.

5.2.4 Learner Autonomy and Motivation

Students reported high levels of autonomy and motivation when using technology. This supports Benson (2021), who argues that digital tools empower learners to take control of their learning process. Motivation appears to increase when learning is personalised and interactive.

Teacher interviews confirmed that students are more engaged when technology is used—especially videos, interactive exercises, and mobile applications.

Interpretation

Technology increases intrinsic motivation and autonomy, especially through:

- Learning apps
- Online videos
- Social media content
  This indicates a shift from teacher-centred to learner-centred practices.

5.2.6 Teachers' Perspectives and Classroom Observations

The qualitative findings from teachers and observations reveal:

- Teachers recognise the value of technology but feel undertrained
- Institutional infrastructure is inadequate
- Classroom use of technology is often limited to videos and digital dictionaries
- Interactive and collaborative technologies are underused

This supports the claims of Hubbard and Romeo (2021) that teacher training is crucial for effective digital integration.

5.3 Discussion According to the Research Questions

RQ1: How do Iraqi EFL students use technology in learning English?

Findings show:

- High use of mobile apps, videos, online dictionaries
- Moderate use of institutional LMS
- Heavy reliance on smartphones
- High frequency of informal digital learning

Conclusion:
Iraqi EFL students use technology frequently but primarily for self-directed learning rather than for structured academic tasks.

RQ2: What are students' perceptions of the effectiveness of technology?

Findings show:

- Strong improvement in vocabulary, listening, pronunciation
- Moderate improvement in speaking, writing
- Increased autonomy and motivation

Conclusion:
Students perceive technology as highly beneficial, particularly for receptive skills and engagement.

RQ4: What are teachers' perspectives on using technology in EFL classrooms?

Findings show:

- Teachers support using technology but lack training
- Many feel overwhelmed by technical demands
- Need for institutional digital strategies
- Use is limited to basic tools

Conclusion:
Teacher readiness, not just student access, is critical for successful digital transformation.

5.4 Pedagogical Implications

5.4.1 Implications for EFL Teachers

- Teachers should integrate more interactive digital tools such as Kahoot, Quizlet, Padlet.
- Training should focus on using technology for productive skills (speaking, writing).
- Teachers should design blended-learning strategies combining in-class and online learning.
- Teachers should encourage students to use mobile apps for autonomous learning.

5.4.2 Implications for Curriculum Designers

- Incorporate MALL explicitly into syllabi.
- Develop digital tasks aligned with learning outcomes.
- Include multimedia materials in textbooks.
- Integrate digital literacy outcomes into EFL programmes.

5.4.3 Implications for Policymakers and Institutions

- Upgrade internet infrastructure in universities.
- Provide teacher training workshops on TELL and MALL.
- Establish clear national strategies for digital education.
- Equip classrooms with functional projectors, speakers, and computers.

5.5 Limitations of the Study

Despite its strengths, the study has several limitations:

1. **Sample size** limited to one university in Baghdad.
2. **Self-reported data** may include bias.
3. **Observations** covered only six classes.
4. The study focused mainly on smartphone-based learning, not advanced technologies such as VR or AI.
5. Limited focus on long-term learning outcomes.
6.

5.6 Suggestions for Future Research

Future studies may explore the following areas:

- Comparative studies across multiple Iraqi universities
- Experimental research testing specific technological tools
- Longitudinal studies on the long-term impact of mobile learning
- The role of AI-based tools (e.g., ChatGPT) in writing development
- Teachers' digital literacy development programmes
- Technology integration during emergency contexts (e.g., pandemic, crisis).

5.7 Conclusion

The study concluded from the findings that technology has a significant positive impact on Iraqi EFL students' listening experience and overall language development through mobile applications, online dictionaries, YouTube videos, learning management systems, and other multimedia resources which enhance students' listening comprehension, vocabulary acquisition, motivation, and learner autonomy. In addition to that, students reported positive attitudes toward technology-supported learning, as well as teachers acknowledged that digital tools increase classroom engagement and provide learners with greater exposure to authentic English language input. These findings support the theoretical perspectives of Computer-Assisted Language Learning (CALL), Mobile-Assisted Language Learning (MALL),

Constructivist Learning Theory, and Sociocultural Theory, all of which emphasise the value of technology in promoting active, learner-centred, and interactive language learning.

Despite these benefits, the study also identified several barriers that continue to limit the effective integration of technological advances in Iraqi EFL classrooms, the finding of the study revealed that there were inadequate technological infrastructure, unreliable internet connectivity, limited access to modern equipment, and insufficient professional training for teachers remain major challenges. So, these obstacles reduce opportunities for fully integrating digital technologies into classroom practice and restrict the educational benefits that technology can provide.

The study, also, contributes to the growing body of research on technology-enhanced language learning in Iraq by offering empirical evidence from both students and teachers as it demonstrates that technology should not be regarded merely as a supplementary teaching aid but as an essential component of modern English language education capable of fostering autonomous learning, improving listening proficiency, and preparing students for communication in an increasingly digital and globalised world.

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