



Iraqi EFL Students' Perceptions on the Use of GPT

ARTICLE INFO

Received: 2 /11/ 2025

Accepted: 1 /2/ 2026

Published: 12 /2 /2026

استلام البحث: ٢٠٢٦/ ١١ /٢

التعديل الأول: ٢٠٢٦/ ٢ /١

القبول للنشر: ٢٠٢٦/ ٢ /١٢

Majid Bani Madhi

ماجد باني ماذي

قسم اللغة الإنجليزية، كلية التربية الأساسية، جامعة ميسان

College of Basic Education, University of Misan, Iraq

majid_bani@uomisan.edu.iq

<https://orcid.org/0000-0002-5141-0347>

DOI: <https://doi.org/10.52834/jmr.2026.224314>

Abstract :

This paper examines the perceptions of Iraqi EFL students towards the application of GPT tools, including ChatGPT, when learning English at a local language learning institute. With a convergent parallel mixed-methods design, the research surveyed 100 intermediate and advanced students and interviewed 16 participants. Findings reported a significant increase in perceived usefulness, ease of use, and

skills improvement at the end of a three-month intervention. Gender was important in the perception of usefulness, as female students rated GPT higher, whereas advanced learners were more likely to give a high rating on ease of use . Participants reported improved writing, vocabulary, and speaking abilities, yet pointed out the continued challenges , such as limited internet access and cultural opposition. Qualitative findings underpinned

quantitative findings and concerns regarding over-reliance and academic integrity were revealed . The findings underscore the potential of GPT as a useful instrument of EFL education in Iraq, with the condition of improvements in digital infrastructure and culturally responsive implementation strategies. The study contributes a Middle Eastern perspective to AI-assisted language

education, emphasizing the necessity of addressing local challenges to maximize technology integration and support student autonomy and engagement.

Keywords: EFL students' perceptions, AI-assisted language education, GPT tools , usefulness, ease of use, language skills, technical and cultural challenges

تصوّرات طلبة اللغة الإنجليزية بوصفها لغة أجنبية في العراق حول استخدام GPT

إدراك فائدة الأدوات، و سهولة استخدامها، و تحسن المهارات في نهاية فترة الدراسة التي استمرت ثلاثة أشهر. و أظهرت النتائج ان الجنس لعب دورا مهما في إدراك فائدة الأدوات حيث قيمت الطالبات ال ChatGPT بدرجة اعلى، بينما توجه الطلبة في المستوى المتقدم نحو تقييم اعلى لسهولة الاستخدام. كما اشارت النتائج الى تحسن عام في مهارات الكتابة، المفردات، و المحادثة، ألا انها أيضا اشرت

الخلاصة :

يهدف هذا البحث الى دراسة تصورات الطلبة العراقيين متعلمي اللغة الإنجليزية كلغة أجنبية تجاه تطبيق أدوات الذكاء الاصطناعي اللغوية GPT مثل ال ChatGPT في تعلم اللغة الإنجليزية في أحد المعاهد المحلية لتعليم اللغة. صممت الدراسة تصميمًا متوازيًا مختلطًا مقاربيًا، و شملت الدراسة استبيانًا شمل ١٠٠ طالب من المستويين المتوسط و المتقدم، بالإضافة الى مقابلة ١٦ طالبًا. أشرت النتائج زيادة ملحوظة في

التكنولوجيا ودعم استقلالية المتعلمين ومشاركتهم الفعّالة.

الكلمات المفتاحية: تصوّرات طلاب اللغة الإنجليزية كلغة أجنبية (EFL)، التعليم اللغوي المدعوم بالذكاء الاصطناعي، أدوات GPT، مدى الفائدة، سهولة الاستخدام، المهارات اللغوية، التحديات التقنية والثقافية.

Introduction

Background

The application of artificial intelligence (AI) in English as a Foreign Language (EFL) learning as an educational tool revolutionized educational methods. The field of EFL education has seen a transformation thanks to Generative Pre-trained Transformer (GPT) models particularly through the ChatGPT technology developed by OpenAI because these

تحديات مثل ضعف خدمة الانترنت، و الممانعة الثقافية.

و دعمت نتائج المقابلة نتائج الاستبيان، حيث كشفت عن مخاوف تتعلق بالنزاهة الاكاديمية و الاعتماد المفرط على التقنية. تظهر الدراسة الإمكانيات الكبيرة لأدوات ال GPT كوسيلة فعالة لتعليم اللغة الإنجليزية كلغة اجنبية في العراق شرط تطوير البنية التحتية الرقمية و تطبيق استراتيجيات تتناسب مع البيئة العراقية الثقافية. ان هذه الدراسة تسهم في تقديم منظور شرق اوسطي لتعليم اللغة بمساعدة أدوات الذكاء الاصطناعي، كما تؤشر الى الحاجة الملحة لضرورة معالجة التحديات المحلية لتعزيز دمج models deliver personalized feedback as well as interactive dialogue and content generation capabilities (Liu & Ma, 2023). Since its launch in November 2022 ChatGPT has received widespread attention because it offers instant context-specific answers which enhances EFL learning by promoting self-directed learning and increased student interest (Teng, 2024).

GPT models enable text generation at human levels, respond to



inquiries , and offer individualized feedback thus making them effective in EFL educational environments throughout the world. EFL students receive improved writing and speaking abilities through GPT tools which provide formative feedback, dialogue simulation, and self-directed learning support (Guo & Wang, 2023 ; Teng , 2024). The research by Alsalem (2024) in Saudi Arabia and Xiao and Zhi (2023) in China showed EFL students found ChatGPT helpful for their academic writing because it was easy to use and provided a lot of immediate personalized feedback . According to such studies, GPT has the potential to revolutionize EFL teaching by following learner-centric strategies that emphasize student participation.

However, the implementation of GPT in EFL education faces various obstacles. The literature contains arguments against academic integrity and excessive dependence on AI and

the possibility of creativity reduction (Mogavi et al., 2024). According to Alsalem (2024) and Liu and Ma (2023) , GPT tools' effectiveness strongly relies on how students perceive them , cultural acceptance of AI systems , and access of the internet. These issues stand out in particular within the Iraqi context.

English is at the heart of the Iraqi education system since it is the global language of communication and the gateway to both academic and professional opportunities (Ahmed & Osam, 2022). However, the EFL education system in Iraq functions in a complicated socio-educational system. Iraqi EFL students face multiple obstacles that include outdated teaching materials, grammar-translation and teacher-focused methods which focus on memorization instead of communication and restricted access to technology (Galali & Cinkara, 2017).

The decades-long conflict and economic issues have caused severe



strain on Iraqi educational infrastructure which restricts the availability of digital tools across the country (Rahim & Chandran, 2021). The use of GPT tools by students and teachers is determined by their levels of digital literacy and their cultural perceptions towards educational technology (Mogavi et al., 2024). Research on Iraqi Kurdish EFL teachers' technological pedagogical content knowledge (TPACK) beliefs demonstrated that experienced teachers supported technology integration yet novice teachers demonstrated better digital tool skills indicating a technological adoption gap between generations (Ali & Mohammadzadeh, 2022). A study on the use of e-learning in Iraqi universities revealed that students adopted digital technologies, though with difficulties due to weak internet penetration and a lack of training initiatives (Khalaf & Mohammed, 2022).

The COVID-19 pandemic has intensified the shift towards digital educational platforms that demonstrated certain technological disparities between learners and teachers (Rahim & Chandran, 2021). The conservative nature of the educational values and collectivist nature of the Iraqi society can also influence cultural attitudes towards artificial intelligence teaching methods (Al-Ibadi, 2022). There is an increasing interest in the EFL education sector in Iraq towards the use of technology in instructional enhancement as GPT is seen to offer potentially viable remedies to the shortcomings of teacher feedback and student speaking practice in addition to learners' autonomy (Mogavi et al., 2024).

Thus the use of GPT tools receives limited attention from Iraqi EFL students due to the above-mentioned obstacles. The aim of this research is to investigate how Iraqi EFL students perceive GPT tools during their



language learning process by adding value to the worldwide investigation of AI-assisted language education. Different educational settings point to possible major differences in GPT perceptions of Iraqi EFL students relative to other contexts which require specific research to understand their viewpoint.

Problem Statement

The rising number of studies about GPT in EFL education lacks scholarly investigations in the Iraqi educational setting. Most research about Iraqi EFL education focuses on the beliefs of teachers and the effects of conventional classroom instruction (Galali & Cinkara, 2017; Rahim & Chandran, 2021). Research findings about Iraqi EFL teacher beliefs toward learner autonomy showed positive attitudes while acknowledging structural limitations such as scarce resources that prevent implementation (Alzebaree

& Yavuz, 2016). Research into e-learning during COVID-19 in Iraq demonstrated student satisfaction with online learning platforms yet students faced unreliable electricity and inadequate internet bandwidth problems (Rahim & Chandran, 2021). The results indicate Iraqi EFL students embrace technology-enhanced learning but their perception of GPT tools could be influenced by their environment.

Multiple obstacles exist because there is no empirical evidence about how Iraqi EFL students perceive GPT. The absence of evidence about AI tools prevents educators from developing effective curricula which would help maximize learner autonomy, motivation, and language proficiency development (Fitria, 2023). The lack of student views hinders policymakers from resolving digital inequality and cultural opposition which must be addressed to successfully implement technology integration (Khalaf & Mohammed,



2022). The absence of student perspective research in Iraq regarding AI technology in education will make the country lag behind global EFL education which will deepen educational inequalities (Alharbi, 2023). The education sector in Iraq demonstrates a pressing requirement for additional research because AI-related studies remain scarce (Baskara, 2023).

Value of the Study

The research importance stems from its analysis of Iraqi EFL students' perceptions because these views must develop culturally appropriate and fair methods for AI integration in education. The study investigates Iraqi EFL students' attitudes toward GPT tools to create teaching methods , educational plans , and policy guidelines which will bridge Iraq's digital education gap. The good attitudes of students towards GPT would enhance its implementation in the classroom that enhances the

development of critical thinking skills together with self-confidence , and cooperative and collaborative learning (Teng, 2024). To deal with negative GPT tool perceptions to effectively adopt the tools, the development of specific intervention programs with teacher training and infrastructure development is needed (Mogavi et al., 2024).

The research adds to the global AI in EFL education dialogue through its Middle Eastern perspective which reveals unique educational challenges beyond Western and Asian educational contexts (Alharbi, 2023). This study supports the demand for technology integration approaches which take into account diverse contexts since students develop their perceptions through their local environment (Khalaf & Mohammed, 2022). This study aims to solve the problem of unknown perceptions by offering practical recommendations for Iraqi educators



and informing global EFL research and advocating for policies that close the digital gap in Iraqi education. The research design integrates both qualitative and quantitative approach in measuring the trends of students and also delving into detailed experiences which gives overall details concerning the use of GPT in Iraqi EFL education. The lack of research about Iraqi EFL students' opinions on GPT tools hinders the achievement of effective and fair AI integration in language education. This research would be critical in the process of determining whether GPT tools would address the needs of Iraqi education system or whether there are contextual limitations to its potential since the country operates within systematic challenges of technology, pedagogy and culture. The research findings will direct stakeholders to establish a technology-enhanced EFL environment that accommodates the distinctive characteristics of Iraq.

Objectives of the Study

The following research objectives describe the main goals of the study to investigate Iraqi EFL students' views about implementing Generative Pre-trained Transformer (GPT) models specifically ChatGPT in their English language education at the Language Home Center in Baghdad.

1. To examines the perceptions of Iraqi EFL students regarding the impact of GPT models on their learning of the English language.
2. To evaluate how GPT models affect the language development of Iraqi EFL students based on their gender and proficiency level.
3. To determine the technological, cultural and educational challenges Iraqi EFL students encounter using GPT models for language learning and evaluate how these obstacles affect their technology adoption.



Review of Related Literature

Artificial Intelligence

Artificial Intelligence (AI) refers to systems that execute human-like intelligent tasks including natural language processing and problem-solving and teaching (Frankland et al., 2023). Utilizing AI in EFL education can transform it by offering flexible learning and customizing feedback and student control (Zawacki-Richter et al., 2019). Theoretically, one can state that the AI can be equipped to Constructivism (Vygotsky, 1980) that presupposes that students create knowledge during an active process. The AI tool to support constructivism includes GPT that offers interactive platforms so that EFL students can practice language skills and receive instant feedback on how to fix their errors, learn linguistic structures on their own (Solak, 2024). According to the Technology Acceptance Model (TAM), perceived usefulness (e.g.,

enhance language proficiency) and ease of use (e.g., negotiating AI interfaces) may play a significant role in persuading the students to accept AI (Granić & Marangunić, 2019).

The Role of ChatGPT in Technology-Enhanced Language Learning

Holmes and Tuomi (2022) describe ChatGPT as a model dependent on Technology-Enhanced Language Learning (TELL) which can provide conversational interchange for teaching EFL writing skills, speaking abilities, and vocabulary learning. McGuire et al. (2024) believe that the TELL approach utilizes ChatGPT as a computer-generated instructor who provides immediate feedback through replicated dialogue for self-directed practice while following learner-centered approach of Constructivism to knowledge creation. According to Vygotsky's (1980) Zone of Proximal Development (ZPD) students need to



receive individualized support using AI that offers advanced vocabulary and correct grammar suggestions. Accordingly, the Iraqi EFL student population who primarily uses rote-based methods with teacher-centered approaches could benefit from ChatGPT in TELL because they would view it as a helpful tool for interactive learning. The Community of Inquiry (CoI) framework demonstrates how ChatGPT supports cognitive presence through critical thinking activities and teaching presence through feedback but its absence of social presence could reduce its effectiveness in Iraq's conventional classroom setting (Garrison & Arbaugh, 2007).

There are several theoretical frameworks which can provide explanations regarding the way AI and particularly ChatGPT may influence EFL learning and student perception development. According to Davis (1985), one of the intended frameworks

is TAM which asserts that users will accept technology when they find it useful and easy to use. The adoption of GPT by Iraqi EFL students depends on their positive assessment of its usefulness for writing and speaking fluency improvement and ease of access through user-friendly interfaces but they may face barriers from unreliable internet connections that decrease system usability. The educational philosophy of Constructivism through Vygotsky's ZPD shows how GPT can act as a learning scaffold for students who do not have resources (Jonassen et al., 1995). The Community of Inquiry (CoI) framework shows that GPT supports cognitive and teaching presence but its limited social presence could affect student involvement in Iraq's traditional classrooms (Shea & Bidjerano, 2008).

As the Self-Determination Theory (SDT) postulates, students acquire motivation under the influence of three



key factors: autonomy, relatedness, and competence (Ryan and Deci, 2017). The GPT platform provides self-directed learning opportunities through autonomous practice and skill development yet its lack of relationship-building aspects may negatively affect student motivation in Iraq's rote-based educational system. The Unified Theory of Acceptance and Use of Technology (UTAUT) builds upon TAM by integrating social influence factors such as instructor attitudes and facilitating conditions including infrastructure which determines technology adoption in Iraq because of its cultural and systemic factors (Venkatesh et al., 2016). The combination of these theories demonstrates that student perceptions emerge from their individual beliefs alongside learning processes together with their motivation and the distinct socio-educational characteristics of Iraq.

The Potential of AI-Powered Tools

The educational technology sector uses AI tools such as GPT to develop EFL education by creating scalable adaptive interactive learning experiences. According to Popenici & Kerr (2017) the theoretical framework of SDT supports these tools because they enable students to practice independently while receiving customized feedback which solves traditional EFL instruction limitations (Ryan & Deci, 2017). AI tools provide EFL students with personalized learning opportunities that help them overcome the difficulties of large classes and restricted teacher feedback. Cognitive presence Col framework shows how AI tools enhance the teaching experience by means of text analysis tasks and teaching presence by means of automated guidance that can reshape the traditional teacher-centered classrooms (Garrison and Arbaugh,



2007). According to Granić & Marangunić (2019), based on UTAUT, reliable internet access and social influence from peers or instructors are the factors on which the effectiveness of AI tools depends on, yet Iraq faces limitations because of its poor infrastructure and negative cultural response to technology. According to the Socio-Technical Systems Theory (STST) AI technical capabilities need to match FL learners' social environment which includes traditional educational standards and digital access inequalities (Bostrom et al., 2009). Students will base their understanding of AI tools on their exposure to technology alongside their cultural views and their perception of how these tools match their educational requirements thus requiring research on their opinions.

Method

Research Design

The study combines quantitative and qualitative methods to investigate Iraqi EFL students' opinions about implementing Generative Pre-trained Transformer (GPT) models including ChatGPT in their English language education. According to Creswell and Creswell (2018), the mixed-methods research design uses quantitative and qualitative data collection to understand student perceptions, experiences, and challenges while also measuring statistical patterns and detailed student views (Creswell & Creswell, 2018). The convergent parallel mixed-methods design collects quantitative and qualitative data at the same time before researchers analyzed them independently to create combined interpretations (Tashakkori & Teddlie, 2010). The research design works well for perception studies because it enables data triangulation between survey responses (quantitative) and interview answers (qualitative) which



strengthens the validity of the results (Johnson & Onwuegbuzie, 2004).

Participants

The participants of the study involved EFL students who were at intermediate and advanced levels at Language Home Center in Baghdad, Iraq. The researcher used convenience sampling to select 100 students from four existing intact classes. The participants were between 18 and 22 years old and their English proficiency levels were determined through institute placement tests as intermediate and advanced. The research sample contained both male and female students who represented each proficiency level to achieve diversity. The study followed ethical standards by obtaining participant consent while ensuring voluntary participation and

maintaining participant anonymity according to Cohen et al. (2017). The institute administrators together with instructors provided access to participants while no incentives were given to prevent bias.

Instruments

A structured questionnaire and semi-structured interviews were created to collect data, both of which are based on the goals of the study and have been developed on the basis of the Technology Acceptance Model (TAM) and Constructivism (Davis, 1985; Jonassen and Land, 2014).

1. The study employed a 30-item Likert scale questionnaire which originated from Shaikh et al. (2023) while maintaining its validation for EFL technology research. The questionnaire consists of four sections which include (a) ChatGPT perceived usefulness (10 items), (b) perceived ease of use (10 items),



(c) impact on language skills (5 items), and (d) challenges and barriers (5 items). The questionnaire items were adjusted to match the needs of intermediate (CEFR B1) and advanced (CEFR B2) students through simpler language to ensure intermediate students could understand them. The questionnaire was piloted by the Language Home Center on 15 students (not included in the final analysis) that yielded a Cronbach's alpha of 0.89 that means high internal consistency. The pre- and post-intervention measurements were used to monitor the perceptions of the subjects during the intervention period of the semester.

2. Following the intervention, semi-structured interviews were held with 16 participants in order to learn more about their experiences. The participants were chosen from the questionnaire results to represent

different perception levels (positive, neutral, negative) and consisted of 8 intermediate and 8 advanced learners from each class group. The interview protocol contained open-ended questions that asked participants to share their experiences about using ChatGPT throughout the semester and to describe their challenges when using the tool at the Language Home Center. The Interview questions were centered on perceptions and cultural attitudes of participants as it has also explored their experiences (i.e., proficiency and contextual barriers). The interviewer maintained flexibility to ask additional probes during the interview. The interviews took place in English or Arabic depending on participant preference through Zoom to create a comfortable environment while addressing connectivity problems and Arabic responses



were translated by a certified translator.

Data Collection Procedures

The researcher received ethical consent of the administration of the Language Home Center, and then began collecting data in the 2025 academic year. It is worth mentioning that the study took three months to complete. The research process was conducted in 5 stages that encompassed an independent stage that standardized the English proficiency and familiarity with ChatGPT among the entire participants. The step was used to enforce similar and fair learning conditions of every student.

The initial stage of the main study was a one-week homogenizing phase. The three one-hour sessions took place in the institute's computer labs with the participation of all 100 students who were divided equally between intermediate and advanced levels. The

sessions involved teachers who taught how to use educational ChatGPT and also English language evaluation. At the beginning of the session, students were presented with the standardized English test, when the students were to use CEFR criteria. The assessment confirmed B1 level proficiency in intermediate students as well as B2 level proficiency in advanced students. The homogeneity tests revealed 3 students who were excluded from analysis but these students continued their participation in the classes. The participants were split into four distinct groups according to their gender and proficiency level: female intermediate ($n = 23$) and male intermediate ($n = 25$), female advanced ($n = 25$) and male advanced ($n = 24$). The researcher conducted t-tests to verify that there were no significant differences between the gender subgroups.

The second part of this step created time during which the students



were familiarized with the use of ChatGPT. Students attended two sessions based on the instructions on the use of the tool starting with grammar corrections and vocabulary suggestions when working with intermediate and moving up to essay feedback tasks when working with advanced students. The test consisted of a short test to measure the level of knowledge in digital tools and artificial intelligence among students. The participants reached equivalent abilities in English and ChatGPT operations during this phase which minimized potential variations in their future learning achievements.

During the second phase students filled out a pre-intervention questionnaire. Students received the full 30-item questionnaire during the first session and the instructors provided students with time to finish it throughout the class period. The third phase was the main intervention. Students from

both levels participated in three-month long weekly 90-minute sessions which integrated into their existing English class schedule. The sessions took place in computer labs which maintained stable internet connections under the direction of trained instructors. The activities were specifically tailored to match the students' current proficiency level. The intermediate students were working on the simple writing tasks in addition to simple conversations and vocabulary learning. The advanced student group did academic writing tasks and practiced detailed conversation training and studying subject-specific vocabulary. The researcher conducted regular check-ins to ensure student attendance because all students maintained consistent participation.

The fourth phase consisted of administering the post-intervention questionnaire which replicated the survey from before the intervention.



Students finished the survey during their last session and under the researcher supervision. A total of 16 participants were chosen for individual interviews during the final stage. The recorded interviews would last between 15 to 25 minutes after which they were transcribed verbatim as uttered by participants. The researcher assured participants about their right to exit the study whenever they wanted while ensuring all names received confidentiality protection.

Data Analysis

The analysis of baseline and pre- and post-intervention questionnaire data was done using SPSS Version 27. The analysis of digital literacy, AI familiarity, proficiency consistency, post-intervention perceptions about ChatGPT's usefulness and ease of use, language skill impact, and challenges

used descriptive statistics. The paired t-tests allowed the researcher to assess changes in perception, whereas the independent t-tests and ANOVA were used to compare differences in gender groups and proficiency levels. The initial t-tests showed that all key variables maintained p values above 0.05 which confirmed the homogeneity of the groups. Both the Shapiro-Wilk and the Levene tests ensured that the data were in accordance with normality and homogeneity requirements. The thematic analysis of interview transcripts followed Braun and Clarke's (2021) six-phase model which NVivo software supported. The coding process focused on understanding how participants viewed the program as well as its advantages and difficulties and cultural elements and how different proficiency levels affected their experiences. The researcher and an experienced teacher applied independent coding to 25% of



transcripts which resulted in an inter-rater reliability index of 0.81.

The joint display table served as a tool to merge quantitative and qualitative findings which revealed both matching and conflicting results. The preliminary data revealed the success of the homogenizing phase that justified the interpretation of the results of the interventions and gave an in-depth perception of the students.

Results and Findings

Quantitative Results

The used questionnaire investigated participants' perspective toward using AI from four different aspects including perceived usefulness and perceived ease of use alongside their impact on language skills and challenges/barriers. The survey used a 5-point Likert scale to measure responses where 1 indicated Strongly Disagree and 5 represented Strongly Agree. The analysis included descriptive

statistics for means and standard deviations together with inferential tests which used paired t-tests and independent t-tests and two-way ANOVA to assess pre- and post-intervention perceptions and gender and proficiency level differences across four groups consisting of female intermediate ($n = 23$), male intermediate ($n = 25$), female advanced ($n = 25$), and male advanced ($n = 24$). The baseline t-tests did not indicate any significant differences between the groups in terms of digital literacy and AI familiarity and proficiency ($p > 0.05$) that justified the homogenizing stage of the methodology.

Perceived Usefulness

Table 1 shows the means and standard deviations of the pre- and post-intervention in the chosen items and the scale as a whole on perceived usefulness. The overall mean score of post intervention was 4.20 (SD =0.64),



which shows that there was strong agreement that GPT is useful in EFL learning as compared to the pre-intervention mean of 3.88 (SD =0.70).

Table 1 *Perceived Usefulness of GPT*

Item	Pre- Intervention Mean (SD)	Post- Intervention Mean (SD)
GPT helps improve writing skills	3.92 (0.72)	4.32 (0.66)
GPT enhances vocabulary acquisition	3.90 (0.68)	4.25 (0.62)
GPT supports speaking practice	3.78 (0.76)	4.02 (0.74)
Overall (10 items)	3.88 (0.70)	4.20 (0.64)

The researcher used a paired t-test to analyze the obtained data

statistically to evaluate the change in perceived usefulness between pre- and post-intervention periods.

Table 2 *Paired t-Test for Perceived Usefulness*

Comparison	Mean Difference	SD	t	df	Sig.
Post-Intervention vs. Pre-Intervention	0.32	0.71	4.45	96	0.02

The results presented in Table 2 show that perceived usefulness increased significantly after the intervention ($t(96) = 4.45, p = 0.02$) which indicates that the three-month intervention improved students' perceptions of GPT's usefulness in EFL learning. The post-intervention group means for perceived usefulness are



shown in Table 3 divided by gender and proficiency level across the four groups.

Table 3 *Group Means for Perceived Usefulness*

Group	n	Mean (SD)
Female Intermediate	23	4.28 (0.61)
Male Intermediate	25	4.12 (0.66)
Female Advanced	25	4.30 (0.60)
Male Advanced	24	4.10 (0.68)
Overall Female	48	4.29 (0.60)
Overall Male	49	4.11 (0.67)

The results revealed that usefulness from females (M = 4.29, SD =0.60) exceeded those of males (M = 4.11, SD =.67) however, there were a slight difference between intermediate and advanced groups. To spot the statistical significance of the observed

differences, a two-way ANOVA analysis of post-intervention perceived usefulness scores were used among different gender and proficiency levels.

Table 4 *Two-Way ANOVA for Perceived Usefulness*

Source	df	F	Sig.
Gender	1, 93	4.78	0.03
Proficiency	1, 93	0.92	0.34
Gender * Proficiency	1, 93	0.65	0.42

According to the results presented in Table 4, it was revealed that that gender caused a significant main difference (F(1, 93) = 4.78, p =0.03) since females found GPT more useful than males. In additions, it was found that nor proficiency had any significant effect on participants perspective (F(1, 93) =0.92, p =0.34) nor the gender-proficiency interaction (F(1, 93) =0.65, p =0.42) which indicated that proficiency level and the combination of gender and



proficiency did not significantly influence perceptions of usefulness.

Based on the analysis done on the gathered data, it was concluded that gender significantly affected participants' perceptions toward the usefulness using GPT that is in agreement with the Technology Acceptance Model's (TAM) emphasis on perceived usefulness as a significant motive for the users to choose technology in education (Field, 2022). In addition, the results related to the indifference between the proficiency level responses posed that both intermediate and advanced students found GPT equally beneficial.

items addressing the perceived ease of use of GPT and the overall scale.

Table 5 *Perceived Ease of Use of GPT*

Item	Pre- Intervention Mean (SD)	Post- Intervention Mean (SD)
GPT is easy to navigate	3.68 (0.78)	3.98 (0.73)
GPT requires minimal technical skills	3.60 (0.74)	3.90 (0.70)
GPT interface is intuitive	3.58 (0.80)	3.88 (0.76)
Overall (10 items)	3.62 (0.75)	3.92 (0.69)

Perceived Ease of Use

Table 5 provides the summary of the pre- and post-intervention means and standard deviations of the selected

According to the results, it was revealed that a post-intervention overall mean of 3.92 (SD = 0.69) was obtained which indicated that the participants of the study had moderate agreement on the claim that GPT is user-friendly,



compared to a pre-intervention mean of 3.62 (SD =0.75). hence, the researcher used a paired t-test to evaluate the change in perceived ease of use between pre and post-intervention periods.

Table 6 Paired t-Test for Perceived Ease of Use

Comparison	Mean Difference	SD	t	df	Sig.
Post-Intervention vs. Pre-Intervention	0.30	0.75	3	96	0.00

The results presented in Table 6 demonstrate that perceived ease of use improved significantly after the intervention ($t(96) = 3.92, p = 0.00$) which indicated that the three-month intervention made students more comfortable using GPT for EFL learning.

Table 7 Group Means for Perceived Ease of Use

Group	n	Mean (SD)
Female Intermediate	23	3.85 (0.71)
Male Intermediate	25	3.70 (0.74)
Female Advanced	25	4.08 (0.63)
Male Advanced	24	4.05 (0.65)
Overall Intermediate	48	3.77 (0.72)
Overall Advanced	49	4.06 (0.64)

According to the post-intervention group means for perceived ease of use shown in Table 7 with separate values for gender and proficiency level across the four groups, it was found that advanced students ($M = 4.06, SD = 0.64$) rated ease of use higher than intermediate students ($M = 3.77, SD = 0.72$), with slight variations by gender within each proficiency level. A two-way ANOVA test was used to evaluate the



differences in post-intervention perceived ease of use scores based on gender and level of proficiency.

Table 8 *Two-Way ANOVA for Perceived Ease of Use*

Source	df	F	Sig.
Gender	1, 93	1.23	0.27
Proficiency	1, 93	5.62	0.03
Gender * Proficiency	1, 93	0.88	0.35

The results presented in Table 8 demonstrated that proficiency level significantly affected ease of use of GPT because advanced students found it simpler to use than intermediate students ($F(1, 93) = 5.62, p = 0.03$). The analysis revealed no significant difference and effect of gender ($F(1, 93) = 1.23, p = 0.27$) and no significant gender-proficiency interaction ($F(1, 93) = 0.88, p = 0.35$) which indicated that gender and gender-proficiency

combinations did not impact ease of use perceptions.

The results obtained from the two-way ANOVA showed that proficiency level affects how the learners perceived GPT's usability as is in line with the statement posed in the Technology Acceptance Model (TAM) claiming that ease of use is a key factor for technology adoption (Pallant, 2020). The post-intervention improvement together with advanced students' higher

Table 10 *Paired t-Test for Impact on Language Skills*

Comparison	Mean Difference	SD	t	df	Sig.
Post-Intervention vs. Pre-Intervention	0.32	0.77	0.8	96	0.00

ratings shows that understanding academic tasks and better language abilities make learners more comfortable using GPT's interface. Continuing the



analysis of the other items of the questionnaire, a similar procedure was used to investigate GPT's effect on language skills both within and between groups.

Impact on Language Skills

The following Table shows the mean scores and standard deviations of the responses given to the items related to participants' perspective on the effect of using AI platforms i.e., GPTs on improving their language skills.

Table 9 *Impact on Language Skills*

Item	Pre- Intervention Mean (SD)	Post- Intervention Mean (SD)
GPT improves writing fluency	3.88 (0.69)	4.22 (0.64)
GPT enhances speaking	3.72 (0.75)	4.02 (0.71)

confidence		
Overall (5 items)	3.80 (0.73)	4.12 (0.67)

According to the collected data, the scores given to the 5 items on perceived impact of using AI on language skills showed a post-intervention overall mean of 4.12 (SD =0.67), indicating positive perceptions of GPT's role in skill development, compared to a pre-intervention mean of 3.80 (SD =0.73). Accordingly, the differences in the mean scores were investigated by a paired samples t-test.

According to the results shown in Table 10, a significant increase was observed in post-intervention perceived impact on language skills ($t(96) = 4.08, p = 0.00$) which suggests that the three-month treatment was successful in enhancing students' perceptions of



GPT’s effectiveness in improving their English language skills.

In the rest of the analysis process, the mean scores of the post-intervention for perceived impact on language skills, divided into gender and proficiency level groups were compared and investigated.

Overall	49	4.14 (0.65)
Advanced		

Table 11 *Group Means for Impact on Language Skills*

Group	n	Mean (SD)
Female Intermediate	23	4.15 (0.66)
Male Intermediate	25	4.08 (0.69)
Female Advanced	25	4.18 (0.64)
Male Advanced	24	4.10 (0.67)
Overall Female	48	4.17 (0.65)
Overall Male	49	4.09 (0.68)
Overall Intermediate	48	4.11 (0.67)

Based on the comparison of the mean scores, it was observed that they were relatively consistent, with slight variations by gender and proficiency. Hence, once more, a two-way ANOVA analysis was performed to evaluate gender and proficiency differences in post-intervention language skills scores statistically.

Table 12 *Two-Way ANOVA for Impact on Language Skills*

Source	df	F	Sig.
Gender	1, 93	0.95	0.33
Proficiency	1, 93	0.72	0.40
Gender * Proficiency	1, 93	0.45	0.50

According to the findings, it was revealed that gender had no significant effect ($F(1, 93) = 0.95, p = 0.33$), on participants’ perspectives toward the



impact of GPT on improving language skills. It was also found that proficiency ($F(1, 93) = 0.72, p = 0.40$), and gender–proficiency interaction ($F(1, 93) = 0.45, p = 0.50$) had no significant effect suggesting that GPT’s skill–enhancing potential is perceived consistently across all groups.

The findings of research demonstrated that GPT functions as a useful tool for language skill development for learners at any proficiency level and gender, which aligns with the Technology Acceptance Model’s (TAM) (Pallant, 2020) principal that perceived benefits drive technology acceptance. The post–intervention results confirmed that the intervention activities specifically designed for intermediate students through writing tasks and advanced students through academic writing proved effective in supporting their skill development as explained in the methodology. The last

part of the analysis of the study data compared how participants from different proficiency level and gender groups viewed challenges and barriers when using GPT tools.

Challenges and Barriers

Table 13 summarizes the pre– and post–intervention means and

Table 13 *Challenges and Barriers*

Item	Pre– Intervention Mean (SD)	Post– Intervention Mean (SD)
Limited internet access hinders GPT use	4.02 (0.86)	4.18 (0.81)
Lack of digital literacy affects GPT use	3.78 (0.80)	3.92 (0.77)
Overall (5 items)	3.82 (0.82)	3.97 (0.79)



Table 14 *Paired t-Test for Challenges and Barriers*

Comparison	Mean Difference	SD	t	df	Sig.
Post- Intervention vs. Pre- Intervention	0.15	0.66	2.25	96	0.04

standard deviations for selected items representing the concerns related to the faced challenges.

The analysis on the scores of the responses given to the 5 items concerning challenges and barriers revealed a post-intervention overall mean of 3.97 (SD =0.79), highlighting that the participants believed that they had faced significant barriers while using GPT tools. The mean score was slightly higher than the pre-intervention mean of 3.82 (SD =0.82) therefore, the researcher performed a paired samples

t-test to evaluate participant perception changes about challenges and barriers between pre-intervention and post-intervention periods.

The results in Table 14 showed that participants perceived barriers more strongly after the intervention ($t(96) = 2.25, p = 0.04$) because they encountered more technological issues during the three-month intervention including internet connectivity problems and interface problems. The mean of the scores given to the related items by the participants in post-intervention for perceived challenges and barriers are abridged in Table 15 with gender and proficiency level.



Table 15 *Group Means for Challenges and Barriers*

Group	n	Mean (SD)
Female Intermediate	23	4.02 (0.78)
Male Intermediate	25	4.05 (0.80)
Female Advanced	25	3.90 (0.77)
Male Advanced	24	3.92 (0.80)
Overall Female	48	3.96 (0.77)
Overall Male	49	3.99 (0.80)
Overall Intermediate	48	4.04 (0.79)
Overall Advanced	49	3.91 (0.78)

According the mean scores and comparing them, it seemed that the means across groups were relatively

consistent, while the intermediate students reported slightly higher exposure to barriers than advanced students. The results, summarized in Table 16 shows the statistical examination of the results.

Table 16 *Two-Way ANOVA for Challenges and Barriers*

Source	df	F	Sig.
Gender	1, 93	0.38	0.54



Proficiency	1, 93	1.85	0.18
Gender × Proficiency	1, 93	0.22	0.64

Based on the results it was also stated that gender ($F(1, 93) = 0.38, p = 0.54$), proficiency ($F(1, 93) = 1.85, p = 0.18$) and the gender–proficiency interaction had no significant impacts ($F(1, 93) = 0.22, p = 0.64$), which implies that there are no significant differences in the barriers to GPT use between groups, but presumably it is the systemic nature of the infrastructures and cultures in the Iraqi case that would be.

Qualitative Findings

The thematic analysis of 16 interview transcripts (four participants from each group: female intermediate, male intermediate, female advanced and male advanced) revealed three major themes: (1) GPT as a learning enhancer, (2) technological and cultural

barriers, and (3) concerns about over-reliance. These themes are supported by the quantitative data and provide further insights on the experiences of the students.

Theme 1: GPT as a Learning Enhancer

All groups of participants mentioned the benefits of GPT as a tool that helps improve writing, vocabulary, and speaking skills. A female intermediate student pointed out that “ChatGPT helps me to improve my writing skills by correcting my sentences and teaching me new words” (Participant 3, Female Intermediate). A male advanced student used the platform for essay feedback which he preferred to waiting for the teacher, he said: “I use ChatGPT for essay feedback; it’s faster than waiting for my teacher” (Participant 14, Male Advanced). These opinions are in line with the results of the quantitative



analysis for usefulness ($M = 4.20$) and impact on skills ($M = 4.12$), which are supported by the constructivist principles of active learning (Jonassen & Land, 2014).

Theme 2: Technological and Cultural Barriers

Regarding the claims of participants, it was inferred that they faced some technological difficulties such as internet unreliability and low digital literacy. A male intermediate student explained that "I can only use ChatGPT at the center because the internet is slow at home" (Participant 7, Male Intermediate). A female advanced student also noted that she believes that some teachers do not accept education through AI as real learning and hence, did not support its use. These findings support the quantitative scores for challenges ($M = 3.97$) and are consistent with the infrastructure and

socio-educational system of Iraq (Khalaf & Mohammed, 2022).

Theme 3: Concerns about Over-Reliance

Students expressed their concern that they would over rely on GPT and therefore would not be able to learn by themselves. A female intermediate student liked using ChatGPT, but she did not want to use it for all her assignments and she wanted to learn independently. Another male, advanced student, also raised the issue of the integrity in his academic life when he said that "it seems like he is cheating when he is using ChatGPT to complete assignments" (Participant 15, Male Advanced). This theme raises ethical issues that are not covered in the questionnaire, and it is important to have a balanced approach to AI (Mogavi et al., 2024).



Integration of Findings

The combined display analysis following Creswell and Plano Clark’s (2018) mixed-methods approach presented in Table 17 revealed strong alignment between quantitative and qualitative data, with some unique insights.

Table 17 *Joint Display of Quantitative and Qualitative Findings*

Dimension	Quantitative Findings	Qualitative Findings	Integration Outcome
Perceived Usefulness	Students strongly agreed GPT is useful, with significant improvement	Themes: Instant feedback, support for writing and vocabulary	Convergence: Strong agreement on usefulness aligns with praise for feedback

	post-intervention. Females rated it higher than males.	(e.g., “ChatGPT corrects my sentences,” Participant 3).	and practice. Gender difference reflects females’ focus on autonomy.
Perceived Ease of Use	Students moderately agreed GPT is user-friendly, with significant improvement post-intervention. Advance	Themes: Intuitive for advanced users, some technical issues (e.g., “It’s easy once you get used to it,” Participant	Convergence: Moderate ease of use aligns with reports of usability, with advanced students more comfortable.



	d students rated it higher than intermediate.	nt 11).	
Impact on Language Skills	Students strongly agreed GPT improves skills, with significant improvement post-intervention. No group differences.	Themes: Better writing and speaking confidence (e.g., "It helps me write better," Participant 3).	Convergence: Positive skill impact aligns with reported benefits in writing and speaking, consistent across groups.
Challe	Students	Themes:	Converg

nges and Barrier s	noted more barriers post-intervention, such as internet issues. No group differences.	Technol ogical constrai nts (e.g., "Internet is slow," Participant 7), cultural resistan ce (e.g., "Teache rs don't support AI," Participant 11).	ence: Increase d barrier awarene ss aligns with reports of infrastruc tural and cultural challenge s.
Over-Relian ce Conce rns	Not captured in question naire.	Themes: Fear of depende ncy, academi c integrity	Divergen ce: Concerns about over-reliance only in



		issues (e.g., "Feels like cheating," Participant 15).	interviews, suggesting need for new survey items.
--	--	---	---

The two datasets showed that students found GPT to be highly useful and effective for improving their language skills. The qualitative comments offered more information about the benefits of GPT which included instant feedback and personalized practice. These were in line with the questionnaire results which showed that the students agreed that GPT was useful in improving writing fluency and vocabulary acquisition. In addition, the students reported increased awareness of barriers such as unreliable internet and cultural resistance after the intervention that

matched the posed themes in the interview responses. The advanced students found GPT easier to use than intermediate students according to their expressed perceptions which matched the qualitative findings. The female students showed higher ratings of usefulness than male students which indicates gender-based differences in how they view autonomous learning.

One of the differences emerged when there were concerns about over-reliance during interviews. Students had reservations regarding addiction (e.g., I do not want to be dependent on it in doing all the tasks, Participant 4, Female Intermediate) and reliability in academic performance (e.g., Using ChatGPT feels like cheating sometimes, Participant 15, Male Advanced), which were not discussed in the questionnaire. This suggests future surveys should include items on independent learning and academic concerns.



Discussion and Conclusion

The research findings about GPT's impact on Iraqi EFL education provided essential knowledge about its benefits together with limitations through multiple educational theories including Technology Acceptance Model (TAM) , Constructivist Learning Theory Sociocultural Theory and Self-Determination Theory (SDT). Students demonstrated strong agreement about GPT's usefulness which is in line with TAM theory which states that utility perceptions drive technology adoption. Furthermore, the students appreciated how GPT provided immediate feedback alongside individualized assistance that led to better academic results as TAM has proposed (Davis, 1985). The survey results showed female students found GPT more useful because they tend to prefer autonomous individual learning which is in line with the findings of the study conducted by Voyer and

Voyer (2014). These findings show that GPT can support different learning needs of learners of all proficiency levels hence validate the universal nature of TAM in any learning context.

Students demonstrated rising comfort with GPT use through time which confirms TAM's position that user-friendly interfaces promote technological adoption (Pallant, 2020). The results indicating that the advanced students reported better ease of use compared to intermediate students can be well justified by the Constructivist Learning Theory's concept explaining that existing knowledge helps learners build new competencies (Piaget, 1970). The learners demonstrated better utilization of GPT because they had better linguistic abilities and academic knowledge.

In addition, the findings related to effect of GPT in improving students' core language competencies including writing and speaking is justified by the



supporting Constructivist Learning Theory's principles of active student-led learning environments. GPT provided feedback to learners which assisted them in developing their language skills with no observable variations between groups thus demonstrating its adaptability. The tool facilitates the learning processes as outlined by Sociocultural Theory through the attention paid to the social factors in education (Vygotsky, 1980).

The study participants highlighted two major obstacles that included restricted internet connectivity and cultural opposition to the system which Sociocultural Theory identifies as important context-dependent and systemic factors. The related findings which demonstrate that Iraq faces multiple technological barriers are in agreement to the ones posed to educational transformation and reported by Khalaf and Mohammed (2022) discussed. The findings match TAM's

identification of external barriers that resist technological adoption which demonstrates the necessity for systemic support through policy-level interventions.

Student feedback revealed issues of GPT dependency and academic dishonesty that is in-line with SDTs effort of encouraging student autonomy (Ryan and Deci, 2000). The educational system in Iraq remains teacher-focused so students who rely solely on GPT without critical evaluation might lose their intrinsic motivation and decrease their ability to think critically. According to Mogavi et al. (2024), educational institutions that have transitioned to digital novelties must balance the technological assistance with independent learning by employing strategic approaches in integration.

The findings of the research have several significant implications. The educational potential of GPT for EFL education remains high but its



successful implementation needs better infrastructure development coupled with focused training programs. The dependence concerns highlight the need to develop usage guidelines which will protect student autonomy. More research is needed to study the ethical

implications of artificial intelligence setting out and extended educational performance effects to ensure technology functions as an educational aid instead of replacing human instruction.

References

1. Ahmed, S. K., & Osam, N. (2022). Students' and Instructors' Attitudes and Perceptions towards Native and Non-native EFL Teachers in the Kurdistan Region of Iraq. *Arab World English Journal*, 13(4), 115–139. <https://doi.org/10.24093/awej/vol13no4.9>
2. Alharbi, W. (2023). AI in the Foreign Language Classroom: A Pedagogical Overview of Automated Writing Assistance Tools. *Education Research International*, 2023, 1–15. <https://doi.org/10.1155/2023/4253331>
3. Ali, S. S., & Mohammadzadeh, B. (2022). Iraqi Kurdish EFL teachers' beliefs about technological pedagogical and content knowledge: The role of teacher experience and education. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.969195>
4. Al-Ibadi, Q. H. (2022). Investigating Iraqi EFL College Students' Attitudes towards E-Learning and the Challenges



- Faced by Them. *Journal of Education College Wasit University*, 48(3), 497–512.
<https://doi.org/10.31185/eduj.vol48.iss3.2991>
5. Alsalem, M. S. (2024). EFL Students' Perception and Attitude towards the Use of ChatGPT to Promote English Speaking Skills in the Saudi Context. *Arab World English Journal*, 15(4), 73–84.
<https://doi.org/10.24093/awej/vol15no4.5>
 6. Alzebaree, Y., & Yavuz, M. (2016). Learner Autonomy: Iraqi EFL Teachers' Beliefs. *European Scientific Journal ESJ*, 12(31), 59.
<https://doi.org/10.19044/esj.2016.v12n31p59>
 7. Baskara, F. R. (2023). Integrating ChatGPT into EFL writing instruction: Benefits and challenges. *International Journal of Education and Learning*, 5(1), 44–55.
<https://doi.org/10.31763/ijelev.5i1.858>
 8. Bostrom, R. P., Gupta, S., & Thomas, D. (2009). A Meta-Theory for Understanding Information Systems within Sociotechnical Systems. *Journal of Management Information Systems*, 26(1), 17–48.
<https://doi.org/10.2753/mis0742-1222260102>
 9. Braun, V., & Clarke, V. (2021). *Thematic analysis: A practical guide*. Sage.
 10. Cohen, L., Manion, L., & Morrison, K. (2017). Research methods in education. In *Routledge eBooks*.
<https://doi.org/10.4324/9781315456539>
 11. Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, Quantitative,*



- and Mixed Methods Approaches.*
SAGE Publications, Incorporated.
12. Davis, F. D. (1985). *A technology acceptance model for empirically testing new end-user information systems: theory and results.*
<http://ci.nii.ac.jp/naid/20001062454>
 13. Field, A. (2022). *Discovering statistics using IBM SPSS statistics* (6th ed.). Sage.
 14. Fitria, T. N. (2023). Artificial intelligence (AI) technology in OpenAI ChatGPT application: A review of ChatGPT in writing English essay. *ELT Forum Journal of English Language Teaching*, 12(1), 44–58.
<https://doi.org/10.15294/elt.v12i1.64069>
 15. Frankland, J., Mulrooney, W., Crosland, C., & Macmillan, J. (2023). The age of artificial intelligence. *Journal of Paramedic Practice*, 15(5), 214–217.
<https://doi.org/10.12968/jpar.2023.15.5.214>
 16. Galali, A., & Cinkara, E. (2017). The Use of L1 in English as a Foreign Language Classes: Insights from Iraqi Tertiary Level Students. *Advances in Language and Literary Studies*, 8(5), 54.
<https://doi.org/10.7575/aiac.all.s.v.8n.5p.54>
 17. Garrison, D. R., & Arbaugh, J. (2007). Researching the community of inquiry framework: Review, issues, and future directions. *The Internet and Higher Education*, 10(3), 157–172.
<https://doi.org/10.1016/j.iheduc.2007.04.001>
 18. Granić, A., & Marangunić, N. (2019). Technology acceptance model in educational context: A systematic literature



- review. *British Journal of Educational Technology*, 50(5), 2572–2593.
<https://doi.org/10.1111/bjet.12864>
19. Guo, K., & Wang, D. (2023). To resist it or to embrace it? Examining ChatGPT's potential to support teacher feedback in EFL writing. *Education and Information Technologies*, 29(7), 8435–8463.
<https://doi.org/10.1007/s10639-023-12146-0>
20. Holmes, W., & Tuomi, I. (2022). State of the art and practice in AI in education. *European Journal of Education*, 57(4), 542–570.
<https://doi.org/10.1111/ejed.12533>
21. Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed Methods research: a research paradigm whose time has come. *Educational Researcher*, 33(7), 14–26.
<https://doi.org/10.3102/0013189x033007014>
22. Jonassen, D. H., & Land, S. M. (2014). Theoretical foundations of learning environments. In *Routledge eBooks*.
<https://doi.org/10.4324/9781410603203>
23. Jonassen, D., Davidson, M., Collins, M., Campbell, J., & Haag, B. B. (1995). Constructivism and computer-mediated communication in distance education. *American Journal of Distance Education*, 9(2), 7–26.
<https://doi.org/10.1080/08923649509526885>
24. Khalaf, A. J., & Mohammed, A. H. (2022). E-learning in Iraqi universities: A comprehensive review of



- opportunities and challenges. *Journal of Physics: Conference Series*, 2322(1), 012048. <https://doi.org/10.1088/1742-6596/2322/1/012048>
25. Liu, G., & Ma, C. (2023). Measuring EFL learners' use of ChatGPT in informal digital learning of English based on the technology acceptance model. *Innovation in Language Learning and Teaching*, 18(2), 125–138. <https://doi.org/10.1080/17501229.2023.2240316>
26. McGuire, A., Qureshi, W., & Saad, M. (2024). A constructivist model for leveraging GenAI tools for individualized, peer-simulated feedback on student writing. *International Journal of Technology in Education*, 7(2), 326–352. <https://doi.org/10.46328/ijte.639>
27. Mogavi, R. H., Deng, C., Kim, J. J., Zhou, P., Kwon, Y. D., Metwally, A. H. S., Tlili, A., Bassanelli, S., Bucchiarone, A., Gujar, S., Nacke, L. E., & Hui, P. (2023). ChatGPT in education: A blessing or a curse? A qualitative study exploring early adopters' utilization and perceptions. *Computers in Human Behavior Artificial Humans*, 2(1), 100027. <https://doi.org/10.1016/j.chbah.2023.100027>
28. Pallant, J. (2020). *SPSS survival manual: A step-by-step guide to data analysis using IBM SPSS* (7th ed.). Routledge.
29. Piaget, J. (1970). *Science of education and the psychology of the child*. Orion Press.
30. Popenici, S. a. D., & Kerr, S. (2017). Exploring the impact of artificial intelligence on teaching and learning in higher education. *Research and Practice in Technology Enhanced Learning*, 12(1).



- <https://doi.org/10.1186/s41039-017-0062-8>
31. Rahim, M. N., & Chandran, S. S. C. (2021). Investigating EFL students' perceptions on e-learning Paradigm-Shift during COVID-19 Pandemic. *ELSYA Journal of English Language Studies*, 3(1), 56-66. <https://doi.org/10.31849/elsya.v3i1.5949>
32. Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68-78. <https://doi.org/10.1037/0003-066x.55.1.68>
33. Ryan, R. M., & Deci, E. L. (2017). *Self-Determination Theory: Basic Psychological Needs in Motivation, Development, and Wellness*. Guilford Publications.
34. Shaikh, S., Yayilgan, S. Y., Klimova, B., & Pikhart, M. (2023). Assessing the usability of ChatGPT for formal English language learning. *European Journal of Investigation in Health Psychology and Education*, 13(9), 1937-1960. <https://doi.org/10.3390/ejihpe13090140>
35. Shea, P., & Bidjerano, T. (2008). Community of inquiry as a theoretical framework to foster "epistemic engagement" and "cognitive presence" in online education. *Computers & Education*, 52(3), 543-553. <https://doi.org/10.1016/j.compedu.2008.10.007>
36. Solak, E. (2024). Revolutionizing Language Learning: How ChatGPT and AI are changing the Way We Learn Languages. *International Journal of Technology in Education*, 7(2),



- 353–372.
<https://doi.org/10.46328/ijte.732>
37. Tashakkori, A., & Teddlie, C. (2010). SAGE Handbook of Mixed Methods in Social & Behavioral Research. In *SAGE Publications, Inc. eBooks*.
<https://doi.org/10.4135/9781506335193>
38. Teng, M. F. (2024). “ChatGPT is the companion, not enemies”: EFL learners’ perceptions and experiences in using ChatGPT for feedback in writing. *Computers and Education Artificial Intelligence*, 7, 100270.
<https://doi.org/10.1016/j.caeai.2024.100270>
39. Venkatesh, V., Thong, J., & Xu, X. (2016). Unified Theory of Acceptance and Use of Technology: a Synthesis and the Road ahead. *Journal of the Association for Information Systems*, 17(5), 328–376.
<https://doi.org/10.17705/1jais.00428>
40. Voyer, D., & Voyer, S. D. (2014). Gender differences in scholastic achievement: A meta-analysis. *Psychological Bulletin*, 140(4), 1174–1204.
<https://doi.org/10.1037/a0036620>
41. Vygotsky, L. S. (1980). *Mind in society*.
<https://doi.org/10.2307/j.ctvjf9vz4>
42. Xiao, Y., & Zhi, Y. (2023). An exploratory study of EFL learners’ use of ChatGPT for language learning tasks: Experience and Perceptions. *Languages*, 8(3), 212.
<https://doi.org/10.3390/language8030212>
43. Zawacki–Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2019). Systematic review of research on artificial intelligence applications in higher education –



where are the educators?
*International Journal of
Educational Technology in Higher*

Education, 16(1).
<https://doi.org/10.1186/s41239-019-0171-0>