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Artificial Intelligence Efficiency in Learning English as a Second Language

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Abstract

This study aims to assess the effectiveness of utilizing artificial intelligence (AI) techniques in English as a Second Language (ESL) learning. To this end, it conducts an experimental investigation on a sample of 20 second-year students (male and female) from Jerash University. The study employs diagnostic, progress, and final tests, along with a questionnaire and classroom observations, to measure the participants' linguistic skill improvement, their degree of satisfaction, and their confidence level. The results reveal significant progress among the students who employ AI tools in their learning process. Their mean scores increase from 32% at the beginning of the program to 71% at the end. Half of the students achieve the intermediate level according to the evaluation criteria. The study's findings reveal that prior experience using AI tools plays a significant role in enhancing both satisfaction and confidence levels. Students with prior experience score higher than their colleagues. These results affirm that AI enhances learners' linguistic skills and confidence, underscoring the need to integrate it into university curricula and develop parallel training programs to support sustainable self-learning.

Keywords: artificial intelligence, English learning, university education, confidence, satisfaction, self-learning

1. Introduction

1.1 Research Problem

English as a Second Language (ESL) learners encounter numerous obstacles (Banat, 2026) throughout their educational experiences, such as insufficiently structured learning methodologies and a shortage of instructors proficient in current pedagogical practices (Al-qadi et al., 2022). These difficulties often frustrate learners and hinder their ability to master a language. Furthermore, traditional education often focuses on grammatical aspects and formal exercises, neglecting the applied and productive elements of language, such as speaking and writing skills. This approach ultimately hinders the learner's ability to communicate effectively in various life situations.

The accelerated technological development and the rise of artificial intelligence (AI) techniques have offered learners new opportunities for learning English through more flexible and effective systems. It is now possible to leverage AI tools, such as ChatGPT, as linguistic experts capable of introducing organized educational methodologies and sequential steps for gradually evolving linguistic skills (Alzobidy et al., 2024). These tools extend beyond merely

correcting errors or supplying information; they create a communicative environment that emulates authentic practice (Al-qadi et al., 2025). This approach substantially improves learners' self-confidence while offering notable savings in time, effort, and financial resources.

1.2 Background and Importance of the Problem

The use of AI tools is neither unusual for students nor limited to specialists; rather, it has become an integral part of their daily and academic lives. The current university generation grew up in an increasingly digital environment and has become accustomed to using smartphones, educational applications, and digital platforms from an early age. Today's students are instinctively experienced in implementing these tools not only in their educational lives but also in their personal and social lives (Saleh, 2025). This comparative advantage is driven by their familiarity with prevailing intelligent technologies, including virtual assistants, real-time translation apps, and communicative learning platforms (Al-Mosalam & Bani Ahmad, 2024). They utilize AI to search for information, manage their time, communicate, and even pursue their hobbies and develop individual skills.

As a result, AI has become an essential component in education, driven by the evolving demands of modern learners who require instructional approaches that are efficient, precise, and tailored to their individual needs (Saeed & Al Khasawneh, 2025). Integrating AI into English learning reflects a consistency with the social and cultural context experienced by students, as these technologies are now regarded as an essential part of their daily experience and an effective means to achieve sustainable self-learning based on interaction and personalization.

1.3 Thesis Statement and Research Objectives

This study aims to investigate the effectiveness of employing AI technologies in ESL learning, focusing on the ability of these tools to make a significant impact on students' learning journey compared to traditional methods that have long dominated the educational landscape. AI is no longer a secondary assistive tool; it has become a comprehensive educational framework that provides learners with multiple opportunities for interaction, practice, and instant feedback, making it a potent and parallel alternative to the human instructor in many aspects.

This study operates under the hypothesis that students who utilize AI tools for English learning demonstrate measurable progress within a brief timeframe. Such advancement is anticipated to extend beyond foundational linguistic abilities, including reading and writing, to encompass oral communication competencies and increase confidence in applying the language in practical, real-world contexts. This study also aims to assess students' levels of satisfaction with their educational experience using these tools, as well as their confidence levels and ability to continue the sustainable self-learning journey without relying heavily on conventional educational institutions.

This study is not limited to examining the efficiency of AI as a technology; it also assesses its educational, psychological, and social impact on students' experiences. This aim is achieved by exploring the relationship between prior experience using these tools and the level of improvement, satisfaction, and acquired confidence. Therefore, the present study provides a scientific framework that universities and educational institutions can utilize to reconstruct their curricula and integrate AI into their future teaching strategies for ESL.

1.4 Research Questions

1. To what extent do learners demonstrate improvement in their ESL proficiency when using AI, as indicated by the results of the initial diagnostic test and final test at the end of the program?
2. Is there a significant correlation between learners' prior experience in using AI tools and their ability to learn English more effectively using these tools?
3. To what extent is the learners' confidence level in using AI tools related to their degree of satisfaction with their educational experience using these tools?

1.5 Research Hypotheses

This study, consistent with its questions and objectives, is guided by the following hypotheses:

1.5.1 First Hypothesis

Learners who use AI tools demonstrate greater improvement in their English proficiency, measured by the diagnostic test at the beginning of the program and the final test at the end of the program.

1.5.2 Second Hypothesis

A statistically significant correlation exists between prior experience using AI tools and the learners' capacity to achieve substantial progress in learning English using these tools.

1.5.3 Third Hypothesis

The learners' confidence level in using AI tools is positively correlated with their degree of satisfaction with their educational experience using these tools.

1.5.4 Fourth Hypothesis

Students with previous or limited experience using AI tools show higher levels of satisfaction and confidence compared to those with no experience.

1.6 Study Significance

This study's significance lies in its presentation of a contemporary and effective alternative to traditional English learning methods. It provides learners with the opportunity to rely on AI as a critical tool for self-learning and continuous language communication. AI represents more than just an emerging technology; it serves as a functional educational resource, providing students with immediate assistance, accurate tracking of their progress, and personalized learning plans tailored to meet individual needs. Building on this foundation, this study's importance lies not only in illustrating the advantages of these tools but also in shaping a new educational perspective that reconsiders the interaction between learners and the educational process amid ongoing digital transformation.

The study's significance also emerges from the lack of Arabic studies, particularly Jordanian ones, that have addressed this research niche. Despite the accelerated global prevalence of AI technologies, their presence in the Arabic educational setting remains limited and is not being leveraged optimally. This study aims to contribute to filling this cognitive gap. To this end, it presents a scientific framework that universities and educational institutions in Jordan and the Arab world can rely on for adopting a new AI-based educational strategy.

Thus, this study is not limited to the theoretical aspect but also entails direct application. The proposed approach opens the door for teachers and decision-makers to experiment with AI tools and integrate them into classroom practices and university curricula. It may also help guide students toward adopting self-learning supported by this technology, which ensures they acquire a language more effectively and cope with the requirements of contemporary job markets that place increasing significance on technological and linguistic skills.

2. Literature Review

In recent years, artificial intelligence (AI) has gained significant attention in the field of language education, particularly in English as a Second Language (ESL) and English Language Teaching (ELT). The rapid development of AI-driven technologies, especially generative tools such as ChatGPT, has introduced new possibilities for enhancing language learning through interactive, personalized, and adaptive environments.

A growing body of international research highlights the potential of AI to transform traditional language learning practices. Zawacki-Richter et al. (2019), in a comprehensive systematic review, emphasize that AI applications in higher education can support personalized learning and provide immediate feedback, both of which are essential for effective language acquisition. Similarly, Kukulska-Hulme (2020) argues that digital and mobile technologies, including AI-based tools, have reshaped language learning by promoting flexibility, learner autonomy, and continuous engagement beyond the classroom.

More recent studies have specifically examined the role of generative AI tools in education. Kasneci et al. (2023) discuss the educational potential of large language models such as ChatGPT, noting that they can function as conversational partners that allow learners to practice language skills in a low-anxiety environment. This type of interaction is particularly valuable for ESL learners, as it encourages experimentation and reduces the fear of making mistakes. Likewise, Dwivedi et al. (2023) highlight the broader impact of generative AI on education and suggest that tools like ChatGPT can support writing development, idea generation, and individualized feedback.

Empirical research has also demonstrated that AI tools can enhance learner engagement and motivation. For example, Huang et al. (2023) found that AI-supported learning environments contribute to improved student participation and confidence, especially among learners at lower proficiency levels. In a similar context, Godwin-Jones (2019) emphasizes the importance of intelligent assistants in language learning, noting that they provide learners with opportunities for authentic interaction and immediate corrective feedback, which are crucial for developing communicative competence.

In addition, several studies have focused on the role of AI in supporting personalized learning. Fitria (2021) explains that AI tools can create adaptive learning environments that respond to learners' individual needs, allowing them to practice language skills based on their proficiency level and learning pace. Sharma et al. (2024) further confirm that AI-based systems can enhance language acquisition by offering tailored feedback and structured learning pathways. Similarly, Ayala-Pazmiño and Alvarado-Lucas (2023) argue that the successful integration of AI into language education requires careful instructional design and adequate training for learners to maximize its effectiveness.

Despite these global advancements, research on the application of AI in ESL learning within the Arab and Jordanian contexts remains limited. Most existing studies have been conducted in Western or technologically advanced educational settings, which differ in terms of infrastructure, pedagogical practices, and learner expectations. This gap highlights the need for context-specific studies that explore how AI tools can be effectively implemented in Arab universities.

In response to this need, the present study provides empirical evidence from a Jordanian university context, examining not only students' linguistic improvement but also their levels of confidence and satisfaction when using AI tools. By doing so, it contributes to bridging the gap between global research on AI in language learning and its practical application in the Arab educational context.

3. Theoretical Framework

This study is grounded in selected educational theories that help explain how artificial intelligence (AI) tools can support second language acquisition in a practical learning environment.

First, the study draws on constructivist theory, as developed by Piaget (1972) and Vygotsky (1978). This theory suggests that learning occurs through active engagement, interaction, and the construction of meaning rather than passive reception of information. In the context of this study, AI tools such as ChatGPT provide an interactive environment in which learners actively engage with language through writing, reading, and dialogue-based tasks. These interactions allow students to build their knowledge gradually while receiving immediate feedback, which aligns with Vygotsky's concept of the Zone of Proximal Development (ZPD).

Second, the study is informed by Bandura's Social Learning Theory (1977), which emphasizes learning through observation, imitation, and interaction. AI functions in this study as a simulated conversational partner, enabling students to engage in repeated communicative practice without fear of judgment. This type of interaction supports confidence building and encourages learners to experiment with language in a safe and supportive environment.

Together, these theoretical perspectives provide a foundation for understanding how AI can enhance language learning. Rather than serving merely as a technological tool, AI creates an interactive and adaptive learning environment that promotes engagement, supports skill development, and fosters learner confidence. These principles directly inform the design of the learning tasks implemented in this study.

4. Methodology

4.1 Research Design, Participants, and Study Limitations

The study is limited to a sample of 20 second-year students at Jerash University, all of whom are at the beginner level of English. The sample is fairly evenly distributed between the genders, comprising 10 females and 10 males, which provides an equivalent sex representation. Participants demonstrate varying degrees of familiarity with AI tools. Some individuals have gained prior exposure through translation applications, virtual assistants, or self-directed learning platforms, whereas others have not had direct interaction with these technologies.

The researcher provided all participants with necessary instructions and directives for using AI tools, such as ChatGPT, as an essential tool in English learning, thereby ensuring uniform conditions for the experiment and providing an equitable educational environment for all sample members. However, the study's scope remains limited to a small sample and carefully controlled experimental conditions.

This study was conducted over a period of two months on a sample of 20 second-year students at Jerash University, all of whom were at the beginner level of English. The sample was evenly distributed by gender (10 males and 10 females). Participants had varying levels of prior experience with artificial intelligence (AI) tools; some had previously used applications such as ChatGPT, while others had no direct experience.

At the beginning of the program, students were required to take a diagnostic test to determine their initial level of English proficiency. A progress test was administered after one month to assess interim development, followed by a comprehensive final test at the end of the program to evaluate overall improvement.

4.2 Instructional Design

The instructional component of the study was based on the structured integration of artificial intelligence tools, primarily ChatGPT, which served as the central platform for language practice. In addition, students were permitted to use supportive AI-based tools such as grammar correction applications (e.g., Grammarly) and translation tools when necessary; however, ChatGPT remained the primary tool guiding the learning process.

At the beginning of the program, all participants received introductory training on how to use ChatGPT effectively for language learning. This training included instructions on how to formulate prompts, request explanations, engage in conversations, and benefit from feedback. This step ensured that all students, regardless of prior experience, had a basic level of familiarity with the tool.

The learning process was organized around a set of structured tasks designed to target the four main language skills: writing, speaking, reading, and grammar usage, with partial support for listening. These tasks were implemented both inside and outside the classroom, encouraging continuous interaction with the AI tool.

4.2.1 Writing Tasks

Students were asked to write short paragraphs on familiar topics such as daily routines, personal experiences, and simple descriptions. They then submitted their writing to ChatGPT to receive corrections and suggestions. Based on this feedback, students revised their texts.

Objective: To improve writing accuracy, sentence structure, and vocabulary use, while encouraging self-correction through guided feedback.

4.2.2 Speaking and Conversation Tasks

Students used ChatGPT as a conversational partner to simulate real-life communication. They practiced basic dialogues such as introductions, asking for directions, and everyday interactions. Students responded to AI-generated prompts and engaged in repeated exchanges to build fluency. In some cases, they practiced speaking aloud alongside the generated responses.

Objective: To enhance speaking fluency, increase confidence in communication, and reduce anxiety associated with using English in real-life situations.

4.2.3 Reading Tasks

Students interacted with short texts generated by ChatGPT or requested simplified passages appropriate to their level. They were required to read the texts, answer comprehension questions, and ask for clarification of unfamiliar vocabulary when needed.

Objective: To develop reading comprehension skills and expand vocabulary through contextualized exposure to language.

4.2.4 Grammar and Language Practice

Students used ChatGPT to explore grammatical rules by requesting explanations, examples, and exercises. They practiced applying these rules through guided activities and received corrective feedback.

Objective: To strengthen grammatical accuracy and deepen understanding of language structures in context.

4.2.5 Listening Support

Although ChatGPT is primarily text-based, students were encouraged to use text-to-speech tools to listen to generated dialogues and repeat them.

Objective: To support listening comprehension and pronunciation through exposure to structured spoken input.

4.3 Implementation Procedure

Students were required to engage with AI tools regularly throughout the program, both during classroom sessions and as part of their independent study. The instructor monitored student progress through classroom observation, follow-up activities, and continuous guidance on effective use of AI tools.

The role of the instructor was not replaced by AI; rather, it was redefined to include facilitation, supervision, and support. Students were gradually encouraged to rely more on AI as a self-learning tool while maintaining structured guidance throughout the learning process.

4.4 Instruments

The study employed a set of quantitative and qualitative instruments to measure the effectiveness of AI in ESL learning.

4.4.1 Diagnostic Test

A diagnostic test was administered at the beginning of the program to assess students' initial proficiency in reading, writing, listening, and speaking. The test was designed according to CEFR (A1 level) and included 40 multiple-choice questions and three short writing tasks.

4.4.2 Progress Test

After one month, a progress test was administered, including 30 objective questions, a short-written task, and a speaking activity supported by AI interaction.

4.4.3 Final Test

At the end of the program, students completed a comprehensive test consisting of 50 questions of increasing difficulty, in addition to writing and speaking tasks. The test measured overall performance across reading, writing, speaking, and listening skills.

4.4.4 Questionnaire

A questionnaire was distributed at the end of the program to assess students' satisfaction, confidence, and perceived improvement. It was based on a five-point Likert scale and included 20 items divided into four main categories: improvement, satisfaction, confidence, and the relationship between confidence and satisfaction.

4.5 Data Analysis

The data collected from the diagnostic, progress, and final tests, questionnaires, and classroom observations were analyzed using quantitative and qualitative methods. Quantitative data were analyzed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics, including means, standard deviations, percentages, and response distributions, were calculated to evaluate students' language proficiency, perceived improvement, confidence, and satisfaction. A paired-samples t-test was employed to compare diagnostic and final test scores and determine the statistical significance of the observed improvement. Pearson correlation coefficients were used to examine the relationships between prior experience with AI tools and students' confidence and satisfaction, as well as the relationship between confidence and satisfaction.

Qualitative data obtained from classroom observations and open-ended questionnaire responses were analyzed thematically. The analysis focused on recurring patterns related to student engagement, classroom participation, linguistic initiative, vocabulary development, confidence, perceived benefits of AI-assisted learning, and technical difficulties. The quantitative and qualitative findings were integrated to provide a comprehensive understanding of students' linguistic development and educational experiences during the AI-supported learning program.

5. Results

5.1 Improvement in Student Proficiency

The study results show significant progress in students' linguistic proficiency during the experimental period. Twenty second-year students from Jerash University began the program at the beginner level. Eighteen students completed the program, while two students withdrew (representing 10% of the sample).

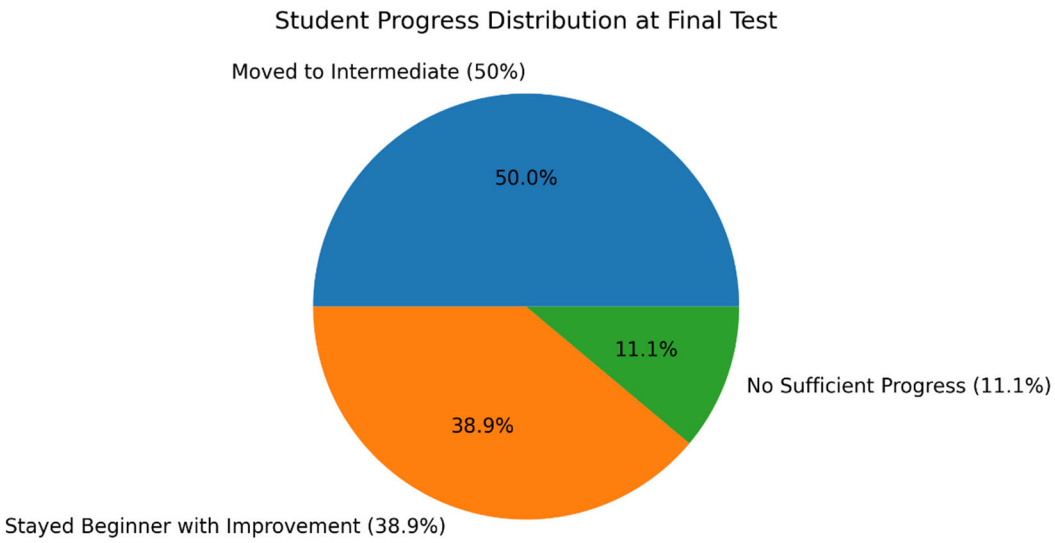


Figure 1. Student Progress Distribution at Final Test

In the diagnostic test, the students' total mean score is 32% (with a standard deviation of 4.6), indicating a convergent beginner level for all participants. After one month, the progress test scores an overall mean of 48%, showing a significant increase of 16 percentage points from the diagnostic test. This result indicates a gradual improvement in basic skills, particularly in reading and linguistic comprehension. Twelve students (66.7%) show an improvement rate exceeding 15% compared to their initial results, while six students (33.3%) achieve a less significant improvement.

Regarding the final test, conducted at the end of the two months, the overall mean is 71%, representing a 39-percentage point increase over the diagnostic test. The results show that nine students (50%) progress from the beginner level to the intermediate level according to the evaluation criteria. Meanwhile, seven students (38.9%) remain at the beginner level, showing partial and significant improvement in their scores, while two students (11.1%) do not make sufficient progress because of frequent absences and a lack of commitment.

Table 1. Paired-Samples *t*-Test Results Comparing Diagnostic Test and Final Test

Statistical Significance	p-value	t-value	Standard Deviation (SD)	Mean After (M2)	Mean Before (M1)	Variable
Statistically Significant at the $\alpha \leq 0.05$ level	0.000	12.85	± 4.6	71.0	32.0	Total Score

As presented in Table 1, the mean scores increased from 32.0 on the diagnostic test to 71.0 on the final test. The paired-samples t-test indicated a statistically significant difference between the two assessments ($t = 12.85$, $p < .001$). This finding suggests that students made substantial progress in their English proficiency during the two-month program.

Classroom observations and the grades allocated for the speaking skill indicate that the confidence level evidently increases. Twelve students (66.7%) report feeling more comfortable when engaging in short English conversations using AI, while six students (33.3%) confirm that their confidence has improved to a moderate degree compared to the beginning of the program.

5.2 Relationship between Prior Experience and Confidence

The study results show a clear positive correlation between prior experience using AI tools and the level of confidence acquired in English skills after the program concluded. Nine students (45%) have previous experience in using AI tools. By contrast, 11 students (55%) exhibit no prior direct experience with these tools.

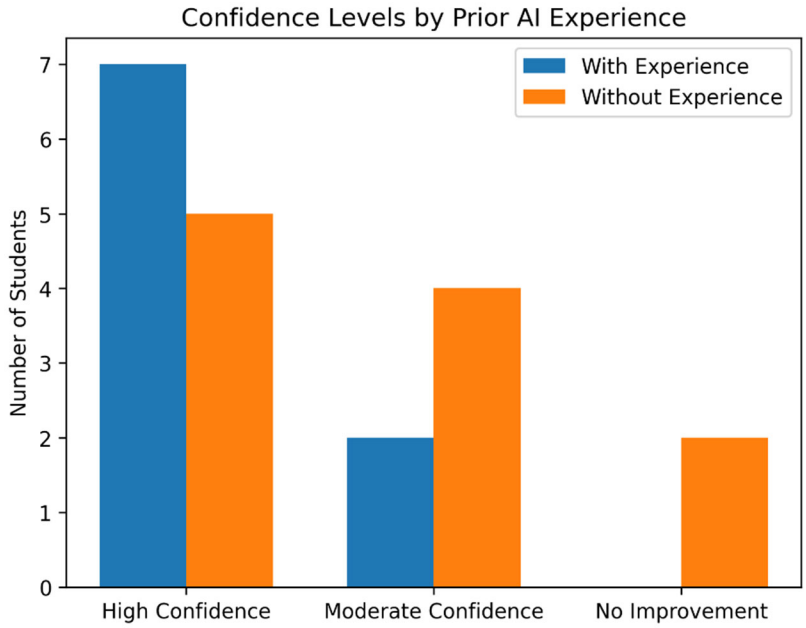


Figure 2. Confidence Levels by Prior AI Experience

The final questionnaire data show that experienced students achieve higher levels of confidence in using English compared to their peers. Specifically, seven out of nine experienced students (77.8%) report that their confidence in practicing the language has increased "very significantly," while two out of nine (22.2%) report that their confidence has increased to a "moderate" degree. No student in this group reports an unchanged confidence level.

The results show that five out of the 11 inexperienced students (45.5%) have felt a significant increase in their confidence level, while four students (36.4%) report a moderate increase in their confidence. However, two students (18.1%) show no noticeable change in their confidence level.

Notably, the percentage of experienced students who report a significant increase in confidence reaches 77.8%, compared to 45.5% among the inexperienced students. This result suggests that having a prior background in using AI tools facilitates students' easy adaptation to the program, thereby increasing their linguistic confidence.

Additionally, the results show that the reported mean confidence score (on a 1–5 scale) is 4.4 among experienced students compared to 3.6 among inexperienced students. This difference clearly reflects the positive impact of prior experience on enhancing confidence, confirming that students who are technically familiar with using AI leverage their experience, increasing their ability to use English with greater confidence in practical situations.

5.3 Relationship between Prior Experience and Satisfaction

The study results show that the level of satisfaction with the AI-based learning experience varies according to students' prior background with using these tools. Nine students (45%) exhibit good prior experience using AI tools, while another group of seven students (35%) is classified as having "limited" experience in using these technologies. By contrast, two students (10%) have no prior experience at all.

The satisfaction questionnaire data show that students who exhibit a positive experience are the most satisfied with the experiment. Six students out of nine (66.7%) report "significantly high" satisfaction, while two students (22.2%) report "moderate" satisfaction, and only one student (11.1%) indicates "low" satisfaction. Students with limited experience (7 students) show disparate satisfaction levels: three students (42.9%) report a "high" satisfaction level, while three (42.9%) report a "moderate" satisfaction level, and only one student (14.2%) reports a "low" satisfaction level.



Figure 3. Satisfaction Levels by Prior AI Experience

One student (50%) of the inexperienced group (two students) exhibits a "moderate" satisfaction level, while the other (50%) reports a "low" satisfaction level. This group reports no "high" satisfaction level. The analysis of the means reveals that the mean satisfaction score (on a 1–5 scale) is 4.3 among students with good experience compared to 3.6 among those with limited experience, while it does not exceed 2.5 among inexperienced students. These results clearly indicate that possessing a strong or even limited background in using AI tools contributes to raising the level of satisfaction with the learning experience. By contrast, inexperienced students face difficulty adapting to the new learning environment, as reflected in their lower satisfaction ratings of the experience.

Table 2. Pearson Correlation Coefficients for Prior Experience, Confidence, and Satisfaction

Statistical Significance	Correlation Coefficient (r)	p-value	Variables
Statistically Significant at the α≤0.05 level	0.62	0.004	Prior Experience × Confidence
Statistically Significant at the α≤0.05 level	0.57	0.009	Prior Experience × Satisfaction
Statistically Significant at the α≤0.05 level	0.69	0.002	Confidence × Satisfaction

As shown in Table 2, prior experience with AI tools was positively correlated with students' confidence ($r = .62$, $p = .004$) and satisfaction ($r = .57$, $p = .009$). A positive correlation was also observed between confidence and satisfaction ($r = .69$, $p = .002$). These results suggest that students with greater prior experience using AI tools tended to report higher confidence and satisfaction, while students with higher confidence also tended to express greater satisfaction with their learning experience.

6. Discussion

The study's findings indicate that AI serves as an effective tool in ESL learning, with most students exhibiting substantial improvement over a relatively brief period. The average test scores rose from 32% at the program's commencement to 71% upon its conclusion. This result suggests the effectiveness of relying on AI tools as an alternative or complementary educational method to conventional methods. This finding is consistent with Sharma et

al. (2024), which shows that AI can provide self-learning and instant feedback, thereby contributing to the improvement of language acquisition efficacy.

Prior experience using AI tools proved to be a conclusive factor in enhancing students' confidence and satisfaction with the experiment. Students with good experience scored higher confidence (4.4/5) and satisfaction (4.3/5) levels, while inexperienced students faced difficulty adapting to the program. This phenomenon also manifested in their lower satisfaction assessment (2.5/5). This result is consistent with Ayala-Pazmiño & Alvarado-Lucas (2023), who argue that the successful integration of AI tools into education requires prior planning and sufficient training for the learners.

The results also revealed a positive correlation between students' confidence in using AI and their overall satisfaction with the educational experience. Higher confidence levels prompt greater satisfaction. This correlation highlights the psychological and social aspects associated with integrating technology in education. Technology not only supports the development of linguistic competencies but also increases learner motivation and fosters greater self-confidence in their capabilities. This view is consistent with the concepts of “constructivism”, which views effective learning as achievable through active interaction and self-regulated meaning construction.

Furthermore, classroom observations revealed that students became more eager to interact and participate, especially in conversation activities, which created a safe environment for experimentation and learning without fear of making mistakes. This result is consistent with Fitria’s (2021) statement regarding AI’s role in creating a simulated environment that contributes to the development of speaking and writing skills.

Despite the positive results, the study identified some challenges, including the withdrawal of two students (10% of the sample) because of a weak commitment or difficulty with adaptation. This result highlights that successful AI integration depends on ongoing monitoring and educational support to address the technological and psychological challenges faced by specific learners.

Overall, the study’s results strongly align with prior literature addressing AI’s role in education. Nonetheless, they provide a new perspective within the Jordanian and Arab context, where studies on this niche are still limited. Therefore, this study contributes to filling the cognitive gap and encourages further research in the future on the best methods for integrating AI into university education.

7. Conclusion and Recommendations

7.1 Conclusion

The study concludes that AI is an effective method for ESL learning. Most students demonstrate noticeable progress within a relatively short period, with a clear improvement in their academic performance and confidence in using language in real-life situations. The results of the progress and final tests reveal that almost half of the students have managed to upgrade from the beginner to the intermediate level, while others have made progress that reflects their benefits from the AI-based educational experiment.

The study’s results also show that the level of prior experience using AI tools is a conclusive factor in reinforcing both confidence and satisfaction. Students with substantial prior experience demonstrate markedly elevated confidence and satisfaction levels. Conversely, those with limited experience exhibit steady yet moderate advancement. Individuals lacking experience face increased challenges in adaptation, which can lead to reduced confidence and satisfaction outcomes. This result confirms that prior preparation and training on AI tools contribute to optimizing educational experience and achieving better outcomes.

7.2 Recommendations

Based on these results, the study recommends the following:

1) Integrating AI technologies into university curricula and ESL courses, making them a part of the formal educational process.
2) Conducting initial training workshops to familiarize students with using AI tools efficiently before starting the intensive academic programs, ensuring all learners are equally prepared.
3) Developing instructional strategies based on interaction and customization, so that every student benefits from a flexible educational plan tailored to their proficiency level, prior experience, and individual needs.
4) Encouraging sustainable self-learning through AI, which reduces costs, saves time, and grants the learner greater autonomy in tracking their linguistic progress.

5) Educating teachers on how to employ AI as a supportive tool, not a replacement, ensuring it is used to enhance the educational process and guide students effectively.

The adoption of AI may not only reduce cost and time but also open new horizons for self-learning and active interaction, providing a more customized and flexible learning environment that aligns with the requirements of the digital age and the global job market.

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Informed Consent

Informed consent was obtained from all participants prior to their participation in the study.

Ethics Approval

The study was conducted within an educational setting at Jerash University and involved English language learning activities, proficiency assessments, and student questionnaires. Participation was voluntary, and the confidentiality and anonymity of participants were maintained throughout the research process. Data were analyzed and reported without disclosing personally identifiable information.

Data Availability Statement

The underlying student assessment results, questionnaire responses, and classroom observation records are not publicly available to protect participant privacy and confidentiality. Access to these data is restricted.

Use of Artificial Intelligence

ChatGPT (OpenAI) was used to assist with language editing, manuscript restructuring, and drafting assistance during the revision process. All AI-assisted text was reviewed and revised by the authors, who take responsibility for the accuracy, originality, and integrity of the final manuscript. No AI-generated synthetic data are presented as empirical research findings.

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