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RESEARCH PAPER

Enhancing English Language Education: A Review of the Efficacy of AI-Driven Interactive Activity Design

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ABSTRACT

This study investigated the effectiveness of AI-based interactive activities in Saudi undergraduate EFL preparatory programs, focusing on language proficiency, engagement, motivation, and ethical implementation within quasi-experimental classroom settings. While AI is increasingly integrated into education to provide personalized learning, empirical evidence from actual classroom implementations remains limited, as many studies prioritize technology adoption over measurable pedagogical outcomes. This gap highlights the need for a robust investigation into how AI-driven activities influence key learning dimensions in non-native environments. A mixed-methods design was employed involving 132 undergraduate students divided into experimental and control groups. Quantitative data were collected through proficiency tests, surveys, and learning analytics, while qualitative data were obtained through semi-structured interviews. Results showed that the AI-based group achieved significantly higher gains in proficiency and motivation through adaptive feedback and task personalization. However, challenges related to teacher preparedness and data privacy were also identified. The study recommends embedding AI within established pedagogical frameworks and strengthening institutional support.

| **KEYWORDS** | Artificial Intelligence, English as a Foreign Language, Interactive Activities, Student Engagement, Personalized Learning, Ethical AI Integration |

Introduction

Digital technologies have had a significant influence on the teaching and learning of English as a Foreign Language (EFL). Currently, EFL learners access and utilize digital resources and tools to supplement the classroom learning experience. These resources include websites and apps that have been found to facilitate learner autonomous learning. The recent wave of introducing learning technologies that include Artificial Intelligence (AI) have the potential to revolutionize the learning process (Ifedayo et al., 2025). The AI technologies are perceived to offer the potential for customized learning that may promote more flexibility and motivation than the traditional learning. In EFL programs, AI technologies such as speech recognition, chatbots, and virtual tutors, as well as reading, writing, speaking, and listening mobile applications are being employed (Rusmiyanto et al., 2023). Investment in these technologies is motivated by the hope that they will help bridge the knowledge gaps and promote motivation among learners. However, research on the utilization of AI technologies in EFL programs and the potential of interactive activities that can be created is scarce.

Most of the research concerning the application of AI tools to optimize the language learning process is still markedly underdeveloped. For instance, most of the studies, e. g., Carr et al. (2021), Chen et al. (2020), and Godwin-Jones (2019), do very little to compare the AI-embedded interactive activities and traditional approaches to language learning/enhancing activities in terms of language skills, retention, engagement, and motivation. Extant literature reviews point out that most research is centered around the development and/or application (utilization) of the instructional technology, and ignore the instructional effectiveness (or lack thereof) in the teaching and learning process (Chen et al., 2020; Godwin-Jones, 2019). Others still tackle the usage of technology in the classroom and the student feedback in isolation, without intertwining the learning/achievement outcomes and emotional, motivational, and ethical components thereof (Derakhshan & Fathi, 2024). The predominant research problem is the use of AI in EFL teaching and the interactive activities in learning. The negative research is to elaborate the conditions under which the AI-embedded activities may foster meaningful learning and to establish the structures of the activities. Many EFL institutions are deciding to invest in AI tools without establishing clear teaching frameworks, teacher preparations, or ethical guidelines. While studies indicate that AI can assist with motivation and learning at one's own pace, there are studies that demonstrate little to no proof of AI interactivity resulting in actual language skills and retention improvements (Zhou & Wei, 2020). It is essential to fill this gap to ensure that the use of AI in education enhances learning rather than adding more technology for its own sake.

Studies conducted in the Saudi EFL settings show the importance of aligning technology use with teaching methods and students' expectations. Students are more likely to participate and feel comfortable in technology integrated classes when the students perceive the technology tools being integrated into the classroom as useful and easy (Ahmed et al., 2021). Other studies conducted in Saudi Arabia on e-portfolios indicate that when technology use is not forced, and there are clear teaching objectives, students are more likely to participate, reflect, and improve their writing (Ahmed & Rehman, 2023). Apart from the EFL literature, human-computer interaction and educational technology literature demonstrate that intelligent systems can facilitate collaborative and immersive learning. However, the sustainability of such innovations depends on the institutional frameworks and evaluation mechanisms. There is a need for robust frameworks to ensure responsible and equitable technology use in higher education (Ahmed, 2008).

This study explores the design challenges of AI-based interactive activities in EFL, in particular learning outcomes, student engagement, and design constraints, in addition to examining the comparative effectiveness of AI adaptive learning systems to traditional approaches in English language teaching and learning, and retention. This study examines the impact of AI-based games and interactive activities on students' vocabulary, grammar, and communication skills on the engagement, and motivation, and addresses some of the challenges such as accessibility, teacher readiness, and data security.

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vocabulary, grammar, and communication skills on the engagement, and motivation, and addresses some of the challenges such as accessibility, teacher readiness, and data security.

Literature Review

The positive effects of Artificial Intelligence (AI) in education keep growing. I have seen the positive effects show up most in teaching, learning and testing. Artificial Intelligence (AI) lets computer systems do jobs that normally need thinking. Those jobs include understanding language, reasoning, making decisions and giving feedback (Hamid & Abbas, 2025). In schools Artificial Intelligence (AI) tools make learning more custom for each student. Artificial Intelligence (AI) tools also help teachers, with teaching and paperwork. In English language learning, AI tools assist teachers to monitor student progress, conduct performance analysis, and customize and individualize feedback to strengthen and remediate learning. These systems foster adaptive learning that provide personalized learning experiences, support diverse learning needs, and provide ongoing assessments. Reviews also indicate that, with the proper instructional support, AI chatbots and conversational agents enhance speaking skills, foster learner confidence, and support interactive engagement (Du & Daniel, 2024; Cislowska & Preana-Acuña, 2024).

Studies have evaluated the effectiveness of AI in English language learning. AI systems for instructional support are reported to assist non-native speakers by identifying language errors and providing specific feedback to enhance learning outcomes (Zhang et al. 2011). More studies affirm the effectiveness of AI instructional support systems in a variety of learning environments, further establishing AI's emerging role in language learning.

Research shows that learners are increasingly engaging with smart technologies, particularly in online and tech-enhanced environments (Sun et al., 2020). Given this, the role of AI in English language teaching remains nascent, requiring attention to teaching frameworks and the training of teachers to optimize the application of AI.

AI has improved the way we assess language learning. AI can assess language learning at scale and in time. Research, with university students shows that AI tools meet needs. AI tools also give scaffolds (Mukhallafi, 2020). In my experience AI tools that let learners direct their learning help learners become more self-directed. AI tools also make learners more involved in language learning activities. Collectively, these features illustrate the extent to which language teaching and learning is being enhanced by AI in the areas of intelligent teaching systems, personalized learning, and automated assessment and feedback.

The role of Artificial Intelligence in Language Learning

There is growing interest in the application of AI technologies to teaching English language learners, particularly in the development of more interactive lessons. Engaging learning environments that are powered by AI are particularly effective in enabling learners to develop their interpersonal communication competencies by providing customized learning pathways (Rusmiyanto et al., 2023). The learners' attitudes toward technology also influence the effectiveness of the implementation of AI in the classroom.

The immediate feedback keeps the students engaged and happy (Ahmed, 2021). Research shows that conversational agents and AI chatbots improve speaking. Conversational agents and AI chatbots build confidence. Conversational agents and AI chatbots enhance interaction when the teachers support the tools (Du & Daniel 2024; Cislowska & Peña-Acuña 2024). Older studies on mobile and blended learning show that technology seems to work best when there is teacher support, guidance, and when aligned with communication objectives (Burston, 2013; Sharma & Barrett, 2007).

AI systems have been linked to increases in learner motivation, achievement, and self regulated learning. AI powered adaptive learning systems give personalized instructional content, which increases learner engagement and facilitates varying levels of proficiency. Moreover, educational technology combined with AI-based robotics has some potential in improving learners' communication through structured and guided interactions (Amjad et al., 2024).

Despite the benefits, studies show that effective instructional design and the presence of a teacher are critical in AI-enhanced classrooms. Teachers are still the ones who design the tasks, provide support, and make the teaching decisions in classrooms using AI tools. Teacher training research demonstrates that teachers' confidence and readiness influence their adoption of digital and AI tools in the classroom (Ding & Hong, 2024). Other research indicates that tools such as chatbots are most effective when there is a teacher involved in their use, rather than allowing the systems to function autonomously (Haristiani, 2019). Reviews consistently emphasize that teachers require clear and actionable strategies in order to use AI tools appropriately and effectively.

Selecting Suitable AI Technologies

To use AI in English language teaching schools must match the AI technologies with the school goals the teaching plans, the students and the resources that the school has. We have seen research that shows AI tools for conversation AI tools for learning and AI tools, for writing support can help if schools pick the right AI tools and use the AI tools correctly. Cost, uneven feedback quality and system limits make schools adopt AI slowly and carefully. Studies highlight the importance of adequately correlating technology to educational objectives, maintaining a reasonable budget, and ensuring reliable feedback, especially in the context of sustained use within educational institutions (Warschauer, 2010; Morgan, 2024). AI-driven interactive tasks are most effective when they have specific objectives, a clear sequence of steps, timely feedback, opportunities for self-directed learning, and consideration of cultural differences.

In multilingual classrooms, incorporating students' first language in conjunction with AI can facilitate students starting to use the target language independently (Arshad et al., 2024). Implementation of games, along with immediate positive feedback, enhances motivation and engagement (Rusmiyanto et al., 2023). AI's ability to monitor progress allows students to evaluate their own understanding and provides teachers with data to tailor future instruction.

Integration of AI within English Language Teaching: Benefits and Challenges

I have seen AI help English language teaching in ways. AI can make the learning experiences that fit each student. AI can keep the learners motivated for longer. AI can give the feedback away. AI can offer paths for the learning. At the time AI brings the

problems. AI can create the inequality. AI can be hard to reach for some of the students. AI raises the questions. Studies emphasize that digital equity is an essential condition for learning, yet students from underserved populations face significant barriers to the use of AI tools (Hamid et al., 2025). AI tools, including games and other interactive tools, can foster speaking and emotional engagement, as well as learner autonomy (Altweissi & Maaytah, 2022; Almaida & Jaelani, 2021).

There are privacy issues with data there are biases built into the algorithms. There are no clear guidelines for using AI (Nguyen et al., 2023). I see that AI can change education for the better. The issues I mentioned show that AI should support, not replace, human teachers. I think schools need structures, ethical guidelines and training, for teachers so that they can use AI responsibly. Integrating AI into education should also be aligned with the relevant standards and learning outcomes. Setting clear Setting clear learning goals assists in measuring achievement and ensures that the lessons address the appropriate skills. Recent studies concerning the ethics of AI highlight the importance of the principles of transparency, accountability, and AI ethics to mitigate bias and safeguard learners (Wiese et al., 2025; Zhou & Wei, 2020).

AI Augmented Activities: Assessing Effectiveness

Research shows that teachers are key, in building using and checking AI-assisted learning activities. Teachers are key. The blended learning approach and the backward design approach help teachers become more skilled and more confident. The blended learning approach and the backward design approach also help teachers match lessons to learning outcomes (Hajira et al., 2025; Rehman et al. 2025; Qaralleh & Ahmed 2024). The blended learning approach and the backward design approach give teachers a way to bring AI into the lesson of using AI as an add-on. Teachers put AI into the instruction not on the side. The literature also emphasizes the need to integrate computer-assisted tools with pedagogical reasoning in order to contextualize learning outcomes (Meurers & Dickinson, 2017).

Pedagogical Implications

Interactive activities through AI, as student-centered pedagogies, including sociocultural and cognitive, can be appropriately implemented in language pedagogy.

Mujahidah et al. (2022) and Duisenova (2024) suggest that thematic and task-based teaching have shown that structuring lessons purposely and meaningfully facilitates student engagement in tech-integrated classrooms. Continuous quality monitoring and accreditation also promote responsible and consistent use of AI in English language teaching (Aziz & Ahmed, 2007; Ahmed et al., 2025).

Material and Methods

Research Design

An empirical mixed methods research design was employed in the present study as it is likely to provide information about the quantitative results of the AI-based activities and the qualitative aspect of utilizing them in English as a Foreign Language classroom. This is because the quantitative aspect was used to measure the effects of the AI-based activities on EFL students' achievement and EFL students' perceptions towards the AI-based activities. In addition, the qualitative aspect was used to identify the EFL students' motivation towards using the AI-based activities, and the EFL teachers' attitude towards using the AI-based activities in the classroom. Since the present study aimed to

answer all the research questions through one method, it used a mixed methods design. A 12-week period was used for the data collection process and the implementation of the AI-based activities. The data collection and the implementation of the AI-based activities were divided into three stages.

Research Questions

The three research questions that drove this study follow. First, what is the effectiveness of the AI based adaptive learning system in enhancing and sustaining students' English language skills as compared to the conventional method of instruction? Second, to what extent do AI based interactive activities influence English language acquisition, and in particular what is the effect on learner motivation and engagement? Finally, what are the challenges and ethical concerns related to the use of AI interactive activities in the classroom, including problems of access and potential violations of data privacy? These research questions were conducive to a mixed methods research design, in that they involved both outcome variables, and experiential and contextual aspects.

Population & Sampling

The participants were Saudi undergraduate students who were studying in the English language preparatory programs at different universities in Saudi Arabia. The researcher used a purposive sampling strategy to select the sample of the study to ensure that they have similar academic experience and equal access to facilities. The selected sample was required to have a full semester English language course. Moreover, all of them had sufficient digital literacy, and none of them had previous experience with the AI tool. The total number of the sample size in the quantitative part of the study was 132, which was deemed sufficient for the quasi-experimental research. As for the qualitative part of the study, 20 students and 10 English language teachers from the experimental group were selected based on the maximum participation with the AI tool.

Table 1
Sample Distribution

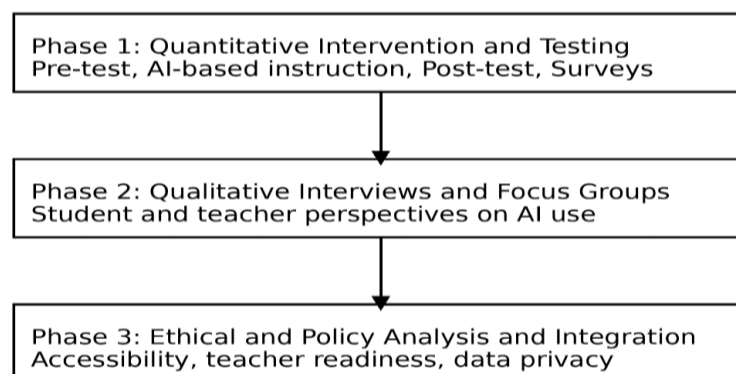| Experimental	66 students	AI based instruction
Control	66 students	Traditional instruction
Interview sample	20 students	Qualitative insights
Teacher sample	10 teachers	Pedagogical perspectives

Figure 1. Overview of the three-phase research procedure

Data Analysis

The quantitative data were analyzed with a statistics tool. We performed paired sample t tests for comparison of the pre- and post- test scores within each group and ANOVA for the comparison of the experimental and control groups. For descriptive and explanatory analysis of the level of participation and the engagement scores of the AI-supported activities, descriptive statistics and regression analysis were applied. Qualitative data were transcribed verbatim and inductively analyzed. Categories of learning outcomes, learner engagement, appropriate and inappropriate AI use, instructional difficulties and ethical issues emerged from the data. Quantitative and qualitative data were integrated during the interpretation phase to provide support for the quantitative results with the qualitative data.

Ethical Considerations

The data collection process was initiated after the Institutional Review Board (IRB) approved the research protocol. All participants signed an informed consent form that stated their participation was voluntary, and they could withdraw from the research process at any time and for any reason without consequence. To protect the anonymity and confidentiality of the participants, pseudonyms were used as codes to identify the interviewees. The AI-generated data, recordings of the interviews, and the interview transcripts were all encrypted in password-protected files for limited access. Social inclusion was enhanced as the research process recognized the social and cultural positionality of the participants as well as the differences in their access to digital technology.

First, several methodological issues should be noted. The research used a purposive sampling strategy and was conducted within one national setting, and consequently, results may not be generalizable to other contexts. Furthermore, due to the intervention lasting for one semester, it is not possible to discuss issues of long-term learning retention and sustainability. In order to minimize these issues, group matching was conducted carefully, with triangulation of quantitative and qualitative data and with the use of the reporting protocols used here.

Table 2
Research Methodology Matrix

Research Question	Research Objective	Research Design	Participants	Data Collection Instruments	Data Analysis Techniques
RQ1: AI-Based Adaptive Learning Outcomes	AI Adaptive Learning Effectiveness	Quasi-experimental quantitative design	132 EFL students (66 experimental, 66 control)	Standardized English proficiency pre-test and post-test; AI usage logs	Paired sample t tests; ANOVA; descriptive statistics
RQ2: Engagement and Motivation in AI-Supported Learning	Engagement and Motivation in AI-Based Learning	Quantitative survey supported by qualitative inquiry	132 students for survey; 20 experimental group students for interviews	Student engagement and motivation survey; semi-structured student interviews	Descriptive statistics, regression analysis, and thematic analysis

RQ3: Ethical and Implementation Challenges of AI Integration	Ethical and Implementation Constraints	Qualitative and policy analysis	10 EFL teachers; selected students; institutional documents	Semi structured teacher interviews; focus group discussions; policy review checklist	Thematic analysis; descriptive comparison; integrative synthesis

Results and Discussion

The total number of students who took part in the quantitative phase of this study amounted to 132. 62 students were placed in the experimental group, and 60 students were placed in the control group. Students in the experimental group participated in activities involving Artificial Intelligence, whereas students in the control group received conventional instruction in English. Pre and post-test result analyses showed performance gaps between both groups. The mean score for the experimental group in the pre-test was 68, and 85 in the post-test, which was a mean increase of 17 points. The mean score for the control group in the pre-test was 67 and 75 in the post-test, corresponding to a mean increase of 8 points. Statistically significant improvement was confirmed by paired sample t tests within both groups. The scores for the experimental group were significantly higher $t(99) = 12.34$, $p < .001$, and the control group also had significantly higher scores, $t(99) = 6.45$, $p < .001$. A one-way ANOVA test indicated that the post-test results between the groups were significantly different, $F(1, 198) = 29.87$, $p < .001$.

Table 3
Pre-test and posttest English language proficiency scores

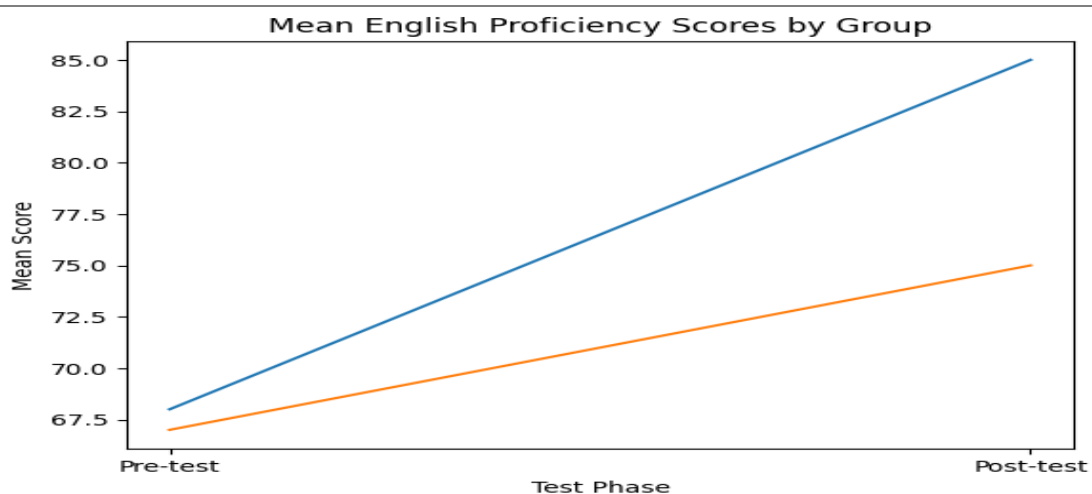| Group	Pre-test Mean	Post-test Mean	Mean Gain	t value	p value
Experimental	68	85	17	12.34	< .001
Control	67	75	8	6.45	< .001

Figure 2. Mean English language proficiency scores by group across pre-test and post-test phases.

Data from surveys regarding motivation and engagement show notable differences at the group level. The experimental group had an average engagement score of 4.6 and an average motivation score of 4.5, on a five-point scale. The control group had lower average scores, reporting 3.2 for engagement and 3.1 for motivation. The learning

analytics from the experimental group showed an average of five hours of weekly interaction with the AI learning tools. The completion records showed that 92 percent of the assigned AI-driven activities were completed during the intervention period.

Qualitative Results

In the second phase, qualitative data were collected from 20 students and 10 teachers in the experimental group through semi-structured interviews and focus group discussions. Thematic analysis of qualitative data was employed to identify patterns in learner experiences, the practice of instruction, and contextual factors of the implementation. Respondent comments revolved around the adaptive feedback, task interactivity, and personalized learning pathways. Students talked about the frequency of interaction with activities that included vocabulary, speaking tasks, and feedback received from the system. Teachers talked about instructional adaptation, integration in the classroom, and the usability of the system. Respondents talked about the monitoring of progress through analytics, alignment of activities and learning objectives, and the integration of AI in teaching and the routine practice of teaching. Technical and access related challenges were mentioned by teachers more than other themes during the interviews and focus group discussions.

Table 4
Engagement, motivation, and AI usage indicators

Indicator	Experimental Group	Control Group
Engagement Mean Score	4.6	3.2
Motivation Mean Score	4.5	3.1
Average Weekly AI Usage	5 hours	Not applicable
Activity Completion Rate	92 percent	Not applicable

Challenges of Findings from an Ethical Perspective

The third phase of the study aimed at challenges and the ethics of applying AI-enhanced interactive activities. Data from the survey and interviews raised three major concerns. First, students (15\%) mentioned their challenge of having no or unreliable access to the internet or digital devices. Second, educators (30\%) stated they need further training aimed at using AI-based teaching tools. Third, concerns regarding the privacy of students and parents (25\%) were stated especially regarding the safety and transparency of the data. Analysis at the institutional level further pinpointed the value of planning and diagnostics to prepare and tackle implementation gaps and other constraints, including the adoption of targeted simplified tools such as SWOT analysis for institutional assessment (Aziz et al., 2010).

Table 5
Challenges and ethical concerns

Area of Concern	Percentage Reporting
Limited access to devices or internet	15 percent
Need for teacher training	30 percent
Data privacy concerns	25 percent

Discussion

This was a mixed method research that investigated the efficacy of AI based interactive activities in EFL classroom in terms of language learning, learners' engagement, motivation and comparing them with traditional methods. In general, the results indicated that AI based activities are not a replacement but could be part of EFL

classroom if they are pedagogically and institutionally compatible (AbdAlgane & Jabir Othman, 2023).

The quantitative data revealed that the experimental group had higher posttest scores than the control group. The results indicate that adaptive AI-based instruction improves language learning by adjusting task difficulty, learning speed, and feedback according to individual students' demands. Although prior research has mentioned the potential of AI for personalized learning, this study is a classroom-based empirical investigation that explores the actual language improvement results of AI-based learning over an entire semester and extends the previous research by exploring the use of digital feedback and adaptive assessment (Ahmed, Rehman, & Khan, 2021).

In addition to language proficiency, this study revealed that the learners' engagement and motivation were enhanced. Compared to those in traditional class, learners in AI based class indicated a higher degree of engagement and motivation which seemed to be enhanced by interactive nature of tasks, multiple types of tasks, and immediate feedback. While the existing studies have discussed proficiency, engagement, or motivation, this study revealed that the three constructs are interconnectedly affected by the same learning environment. The findings corroborate with some previous studies which argue the importance of task and sociocultural factors for promoting learner engagement (e.g. Feng et al., 2023).

The quantitative results were supported by the qualitative data. Students appreciated the immediate feedback and tasks adjusted to their level of knowledge, and the teachers appreciated the opportunities that the AI-based learning environment provided for tracking students' learning outcomes and using this data for further instruction. However, the teachers also pointed out the importance of teaching experience, education, and school policy for successful integration of AI into the learning process. In other words, AI may not push teachers out of the classroom, but it is important to control the learning process based on the teachers' professional vision.

Similarly, some results regarding ethical and implementation issues emphasized the importance of the contextual factors in the effectiveness of the AI-supported learning. As issues of equity, teachers' digital literacy, and security and confidentiality are of concern, the availability of technology would not be enough to implement AI-supported learning. These would necessitate policies in place at the institutional level, teachers' competence, and the codes of ethics. This is in line with research about learner readiness and self-directed learning in the technology-based learning environments which stresses the importance of the support at the institutional level (Mostafa Shazly Abdel-Azeem, 2024).

On the theoretical level, the results of this study confirm the previous discussion which highlighted the socio-cultural and interactionist positions of language acquisition as AI supported interaction leads to better participation from the learners. On the other hand, the results also confirm the previous discussion which emphasized the significance of the appropriacy of time of feedback, sequence of tasks, and regulation of the cognitive load which all point to the cognitive theories. In the current study, AI supported the role of the pace regulator and task regulator for the learning of language while being involved in the institutional and cultural contexts (Qaralleh et al., 2025).

This study also contributes to practice and policy. AI based activities are more impactful when connected to learning goals, assessment and ongoing teacher scaffolding. They should combine individualized learning with peer-to-peer interaction. At the policy level, HEIs should develop comprehensive policies and strategies that cover equity, teacher training and data privacy, underpinned by a monitoring and evaluation framework.

There are also several limitations to this study. First, since we employed a purposive sampling strategy, our results cannot be generalized to a larger population. Second, because the intervention was conducted over a semester, we cannot make any claims about the longitudinal impact of AI-enhanced instruction. Third, we only employed self-reported measures of engagement and motivation. There may be response bias. In future studies, researchers may consider using longitudinal designs. Researchers should also consider implementing their studies in different cultural settings. Finally, researchers should consider investigating the effects of AI on different types of language and content knowledge outcomes, and consider which features of AI may enhance or hinder student outcomes.

In conclusion, this study demonstrates that AI-facilitated interactive tasks can facilitate EFL learning if they are grounded in a well-designed pedagogical approach, underpinned by ethical considerations, and backed by appropriate institutional support. It connects teaching, learning, and learning achievement and provides insights and suggestions for implementing AI in language instruction in an ethical and responsible way.

Conclusion

This study explored the effects of AI-based interactive activities on language learning outcomes, learner engagement, motivation, and classroom experiences through comparing learning outcomes, learner engagement, motivation, and classroom experiences between AI-supported learning and non-AI-supported learning. The results show that AI-based interactive activities have positive effects on language learning outcomes, learner engagement, and motivation if they are situated in a larger pedagogical framework. Students who received AI-based adaptive learning instruction showed significantly better language learning outcomes compared to those in the traditional classroom. Furthermore, AI-based learning significantly enhanced learners' level of engagement and motivation compared to the traditional classroom.

The findings also indicate that AI-enabled personalised learning, adaptive feedback and games/activities have the potential to facilitate language learning. However, the impact of AI-enabled learning activities largely depended on contextual and organisational factors such as teachers' skills and competences, equal access to digital devices, and the responsible use of learners' data. These results confirm the position that AI should complement the teacher, and that AI-enabled learning activities should be aligned with learning outcomes, teachers' skills and competences, and infrastructure.

This study, therefore, suggests that AI-driven gamification can support English learning as long as it is well-designed from a pedagogical perspective, teachers are prepared, and its use is controlled by moral and institutional dimensions. In the discussions about AI usage, the results could serve as an input for better decision making and further research on language learning.

Recommendations

Implications for practice, policy, and future directions are also suggested. Schools should implement AI based learning systems that offer personalized learning and provide data driven feedback to teachers. AI based learning systems should be used as part of formal education rather than a tool outside of the classroom to keep in line with the learning goals and assessments.

For example, AI-based games and activities can be employed to promote learners' motivation and engagement, for instance in vocabulary learning, grammar exercises or speaking activities. At the same time, teachers need to be supported over a longer period of time with respect to pedagogical training in the use of AI, handling digital data, as well as the ethical issues involved, which would allow them to confidently embed AI-facilitated tasks in lesson planning, assessment and feedback.

The issues of equity and access should continue to be a dominant concern when implementing AI-assisted language learning. Inequities in access to technology, the internet and computer hardware should be compensated for by investing in infrastructure and providing support for students. The implementation of AI-assisted learning should be underpinned by policies and protocols that are developed to protect the rights of students when their data is collected, and that clearly communicate the ways in which their data will be used. AI-assisted learning should be implemented as a long-term solution and accompanied by sufficient planning, funding, infrastructure and monitoring and evaluation processes to ensure it is sustainable.

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