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**GENDER DIFFERENCES IN ATTITUDES TOWARDS AI-ASSISTED ENGLISH
LANGUAGE LEARNING AMONG UNDERGRADUATE STUDENTS IN TWO
NIGERIAN UNIVERSITIES**

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Abstract

As artificial intelligence (AI) becomes increasingly integrated into English language learning, understanding learners' attitudes towards AI-assisted learning has become an important area of educational research. Although previous studies have generally reported positive perceptions of AI-assisted language learning, evidence regarding the influence of gender remains inconclusive, particularly among undergraduate students in Nigerian universities. This study investigated gender differences in attitudes towards AI-assisted English language learning among undergraduate students from two Nigerian universities. A descriptive survey design was adopted, involving 200 undergraduate students. Data were collected using a structured questionnaire adapted from validated instruments assessing learners' attitudes towards AI-assisted English language learning and analysed using descriptive statistics and an independent-samples *t*-test. The findings revealed that undergraduate students demonstrated positive attitudes across all measured dimensions of AI-assisted English language learning. Although female students recorded marginally higher attitude scores than their male counterparts, the difference was not statistically significant, indicating that gender was not a significant determinant of learners' attitudes. The findings indicate that students' acceptance of AI-assisted English language learning is influenced more by its perceived educational value than by gender. By providing context-specific evidence from two Nigerian universities, this study contributes to the growing literature on AI-assisted English language learning and informs the responsible integration of AI technologies into English language instruction in higher education.

Keywords: Artificial intelligence, English language learning, learner attitudes, gender, undergraduate students, Nigeria.

Introduction

Artificial intelligence (AI) has become one of the most transformative innovations influencing contemporary higher education, particularly in English language teaching (ELT). The emergence of generative AI technologies has expanded opportunities for students to engage with English language learning through personalised instruction, real-time feedback, intelligent tutoring, automated writing support, and interactive language practice. Unlike earlier forms of computer-assisted language learning, AI-powered applications can adapt to learners' needs by generating explanations, responding to prompts, correcting linguistic errors, and facilitating independent learning beyond the classroom. Consequently, AI is increasingly recognised as a valuable pedagogical resource that can enhance language instruction while supporting learner autonomy and engagement in higher education (Mayer, 2021; Moorhouse, 2024).

The integration of AI into English language learning reflects the broader transformation of digital pedagogy, in which intelligent technologies are increasingly used to enhance learning experiences and educational outcomes. AI-assisted English language learning encompasses the use of generative AI chatbots, intelligent writing assistants, grammar correction tools, machine translation systems, and other AI-driven applications to support the development of learners' reading, writing, speaking, listening, vocabulary, and grammatical competence. These technologies provide immediate feedback, personalised learning pathways, and opportunities for continuous language practice, thereby complementing classroom instruction rather than replacing the role of language teachers. Recent scholarship argues that the effective integration of AI into ELT depends not only on technological capability but also on sound pedagogical implementation and responsible educational use (Mayer & Fiorella, 2022; Cogo et al., 2024).

As AI becomes more embedded within English language education, increasing scholarly attention has been devoted to understanding how students perceive and respond to AI-assisted learning environments. Students' attitudes towards AI are particularly important because they influence learners' willingness to adopt AI technologies, their level of engagement with AI-supported learning activities, and their intention to continue using these technologies for academic purposes. Recent empirical studies generally indicate that undergraduate students hold favourable attitudes towards AI-assisted English language learning due to its accessibility, efficiency, personalised support, and capacity to enhance language learning experiences. Nevertheless, concerns relating to the accuracy of AI-generated information, academic integrity, excessive dependence on technology, data privacy, and the possible erosion of critical thinking continue to shape students' perceptions of AI in educational settings (Biju & Abdelrasheed, 2024; Fan & Zhang, 2024).

Among the factors that may influence students' attitudes towards AI-assisted language learning, gender has received considerable attention in educational technology research. Existing evidence, however, remains inconclusive. While some studies suggest that male students exhibit greater confidence, technological self-efficacy, and behavioural intention to adopt AI-supported learning tools, other investigations have reported little or no statistically significant gender differences in students' perceptions and acceptance of AI-assisted learning. Such inconsistent findings suggest that the relationship between gender and attitudes towards AI may be shaped by contextual factors, including educational environments, digital literacy, institutional support, and previous learning experiences. Consequently, further investigation is required to establish whether gender continues to influence students' attitudes towards AI-assisted English language learning across different educational contexts.

Within the Nigerian higher education system, the increasing availability of internet-enabled devices, digital learning platforms, and AI-powered applications has accelerated students' engagement with AI-assisted learning. Undergraduate students increasingly utilise AI technologies to support essay writing, vocabulary development, grammar checking,

reading comprehension, academic communication, and independent language practice. At the policy level, Nigeria has also demonstrated growing interest in integrating AI into education and digital capacity development. Despite these developments, empirical studies examining AI-assisted English language learning in Nigerian universities remain limited, with existing research focusing predominantly on AI awareness, technology adoption, or broader educational applications of AI rather than on students' attitudes towards AI-assisted English language learning.

Collectively, existing scholarship has substantially advanced understanding of AI-supported learning; however, three important gaps remain. First, much of the recent literature has concentrated on AI adoption, AI literacy, academic performance, or technology acceptance, while comparatively fewer studies have specifically examined students' attitudes towards AI-assisted English language learning. Second, findings regarding gender differences remain inconsistent across educational contexts, making it difficult to determine whether gender significantly shapes students' attitudes towards AI-assisted language learning. Third, empirical evidence from Nigerian universities, particularly among undergraduate students enrolled in English language-related programmes, remains limited. Addressing these gaps is essential to developing contextually relevant evidence that can inform AI integration in English language education.

In light of these considerations, this study examines gender differences in attitudes towards AI-assisted English language learning among undergraduate students in selected Nigerian universities. Specifically, the study focuses on undergraduate students enrolled in English language-related courses at Obafemi Awolowo University and Osun State University. By generating empirical evidence from both a federal and a state university, the study contributes to the growing body of knowledge on AI-assisted English language learning. It provides evidence that may assist English language educators, curriculum developers, institutional administrators, and educational policymakers in promoting inclusive, effective, and pedagogically responsible AI integration within Nigerian higher education.

Accordingly, this study investigates gender differences in attitudes towards AI-assisted English language learning among undergraduate students in two Nigerian universities. Specifically, it examines undergraduate students' attitudes towards AI-assisted English language learning and compares those of male and female students.

Research Questions

1. What are undergraduate students' attitudes towards AI-assisted English language learning?
2. How do male and female undergraduate students differ in their attitudes towards AI-assisted English language learning?

Literature Review

AI-Assisted English Language Learning among undergraduates

Artificial intelligence (AI)-assisted English language learning refers to the purposeful integration of AI-powered technologies into English teaching and learning to enhance learners' language proficiency, engagement, and autonomy. Unlike conventional computer-assisted language learning, AI-driven applications employ technologies such as natural language processing, machine learning, and generative AI to provide adaptive instruction, immediate feedback, personalised learning pathways, and interactive language practice. These capabilities enable learners to receive context-sensitive support for writing, reading, speaking, listening, vocabulary development, and grammar while learning at their own pace (Mayer & Fiorella, 2022; Moorhouse, 2024).

The rapid emergence of generative AI tools has further expanded the possibilities of AI-assisted English language learning. Applications such as ChatGPT, Google Gemini, Microsoft

Copilot, Grammarly, QuillBot, and Claude have become increasingly integrated into students' academic activities, providing support for idea generation, academic writing, grammar correction, summarisation, translation, and conversational practice. Rather than replacing teachers, these technologies function as complementary learning resources that encourage independent practice and continuous interaction with the target language. Recent research suggests that when appropriately integrated into pedagogy, AI-assisted learning can improve learners' engagement, writing quality, language confidence, and opportunities for self-directed learning while extending learning beyond the physical classroom (Kasneci et al., 2023; Moorhouse, 2024).

Despite these educational opportunities, scholars emphasise that AI should be integrated responsibly within language education. Concerns regarding inaccurate AI-generated responses, academic integrity, algorithmic bias, privacy, and overdependence highlight the importance of balancing technological innovation with sound pedagogical practice. Consequently, the educational value of AI-assisted English language learning depends not only on the sophistication of AI technologies but also on learners' willingness to engage with them, teachers' ability to integrate them effectively, and institutional policies that promote ethical and meaningful AI use (UNESCO, 2023; Jeon et al., 2024).

Overall, AI-assisted English language learning represents a significant development in contemporary ELT by creating more flexible, personalised, and interactive learning experiences. However, the educational benefits of these technologies are closely linked to students' attitudes towards their use. Understanding learners' perceptions therefore remains essential for determining how AI can be effectively integrated into English language education, thereby providing the foundation for the present study. Given that the present study focuses on learners' attitudes rather than behavioural intention, TAM offers an appropriate theoretical lens for explaining students' perceptions of AI-assisted English language learning.

Theoretical Framework: Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM), developed by Fred D. Davis in 1989, is one of the most widely applied theoretical frameworks for explaining individuals' acceptance and use of information technologies. Originally developed to predict users' adoption of computer systems in organisational settings, TAM has since been extensively applied across diverse educational contexts to explain learners' acceptance of digital technologies, online learning platforms, mobile learning applications, and, more recently, artificial intelligence (AI)-assisted learning environments. The model proposes that individuals' attitudes towards a technology are primarily shaped by two key beliefs: perceived usefulness and perceived ease of use (Davis, 1989).

Perceived usefulness refers to the extent to which an individual believes that using a particular technology will improve learning performance or enhance task accomplishment. Within AI-assisted English language learning, students are more likely to develop favourable attitudes when they perceive that AI applications improve their writing, grammar, vocabulary, speaking, reading, or overall English language proficiency. Perceived ease of use, on the other hand, refers to the degree to which users believe that a technology can be used with minimal effort. AI-powered tools that are intuitive, interactive, and capable of providing immediate responses are therefore more likely to encourage positive learner attitudes and sustained engagement. Recent studies continue to demonstrate that these two constructs remain significant predictors of learners' acceptance of AI-supported educational technologies across higher education settings (Altwijri & Alghizzi, 2024; Fan & Zhang, 2024).

Although several extensions of TAM have introduced additional constructs such as social influence, facilitating conditions, trust, and perceived risk, the present study adopts the original framework because its primary objective is to examine students' attitudes rather than behavioural intention or continued technology use. Given that attitude is the central

variable investigated in this study, TAM provides an appropriate theoretical lens for explaining why undergraduate students may respond differently to AI-assisted English language learning based on their perceptions of the technology's usefulness and ease of use. The model also offers a useful framework for interpreting possible gender differences in attitudes, as previous studies have reported variations in how male and female students perceive and interact with emerging educational technologies.

Accordingly, the Technology Acceptance Model provides the theoretical foundation for this study by explaining the psychological mechanisms that shape students' attitudes towards AI-assisted English language learning. The framework supports the assumption that students who perceive AI applications as useful, accessible, and easy to use are more likely to hold positive attitudes towards their integration into English language learning. Consequently, TAM provides an appropriate basis for examining whether such attitudes differ between male and female undergraduate students in selected Nigerian universities.

Gender and AI-Assisted English Language Learning

Gender has received considerable attention in educational technology research because it may influence learners' perceptions and acceptance of emerging technologies. In AI-assisted English language learning, researchers have increasingly examined whether male and female students differ in their attitudes towards AI-supported learning tools. Earlier studies often reported gender differences in technology acceptance and digital confidence. However, recent advances in digital literacy and the growing accessibility of AI applications have challenged these assumptions, suggesting that learners' attitudes are shaped more by perceived usefulness, ease of use, and prior learning experiences than by gender alone (Fan & Zhang, 2024; Korkmaz & Akbiyik, 2024).

Despite increasing interest in AI-assisted English language learning, the influence of gender remains inconclusive. Recent studies have reported generally positive attitudes towards AI among university students, yet they differ on whether gender significantly affects these attitudes. While some scholars argue that gender differences have become less pronounced as AI technologies become more accessible, others maintain that contextual factors such as educational environment, technological experience, and institutional support continue to shape learners' perceptions (Orhan et al., 2025). These inconsistencies indicate that the relationship between gender and attitudes towards AI-assisted English language learning may vary across educational contexts. Consequently, further investigation within the Nigerian higher education context is necessary to determine whether gender influences undergraduate students' attitudes towards AI-assisted English language learning.

Empirical Review

Recent empirical evidence indicates that undergraduate students are increasingly receptive to AI-assisted English language learning, although researchers have examined the educational implications of these attitudes from different perspectives. Fan and Zhang (2024) investigated the relationships among AI literacy, learning attitudes, foreign language enjoyment, and students' intention to continue using AI-assisted English language learning. Their findings showed that favourable learner attitudes enhanced students' enjoyment of AI-supported learning and significantly strengthened their intention to continue using AI technologies for language learning. A complementary study by Biju et al. (2024) explored the effects of AI-assisted language assessment on foreign language anxiety, learning attitudes, motivation, and writing performance. The authors reported that learners who participated in AI-assisted assessment experienced lower language anxiety, stronger learning motivation, more favourable attitudes, and better writing performance than those assessed through conventional paper-based methods. Although both studies demonstrated the educational value of AI, they conceptualised learner attitudes

differently. Fan and Zhang (2024) examined attitudes as a determinant of learners' continued engagement with AI-assisted language learning, whereas Biju et al. (2024) considered attitudes as an outcome associated with AI-supported assessment and improved language performance. Together, these findings demonstrate that favourable learner attitudes not only encourage sustained engagement with AI technologies but also contribute to more effective English language learning experiences.

Empirical findings regarding gender differences in attitudes towards AI-assisted English language learning remain inconsistent. Korkmaz and Akbiyık (2024) examined tertiary-level EFL learners' attitudes towards AI in language learning and reported favourable perceptions of AI among students, while finding that gender was not a statistically significant predictor of learners' attitudes. Similarly, Orhan et al. (2025) developed and validated the Generative Artificial Intelligence Attitude Scale (GenAIAS) for EFL learners and simultaneously examined students' attitudes towards generative AI in language education. Consistent with the findings of Korkmaz and Akbiyık (2024), the study found positive learner attitudes and no statistically significant gender differences. Despite employing different research objectives and methodological approaches, both studies concluded that gender alone does not adequately explain learners' attitudes towards AI-assisted language learning. However, because these investigations were conducted outside the Nigerian educational context, their findings cannot be assumed to reflect the experiences and perceptions of undergraduate students in Nigerian universities.

In the Nigerian context, research on artificial intelligence in higher education has expanded in response to the growing adoption of AI technologies across teaching and learning. Abubakar et al. (2024) investigated undergraduate students' perspectives on integrating artificial intelligence into pedagogical practices and found that students regarded AI as a valuable educational resource capable of enhancing learning, academic engagement, and instructional effectiveness. At the same time, the study identified challenges related to digital literacy, institutional preparedness, ethical concerns, and equitable access to AI technologies. These findings demonstrate growing acceptance of AI within Nigerian higher education while highlighting contextual factors that may shape students' learning experiences. Nevertheless, the study examined AI integration within higher education broadly rather than AI-assisted English language learning specifically, and did not investigate whether male and female students differed in their attitudes towards AI-supported language learning. Consequently, existing evidence suggests that gender may have a limited influence on learners' attitudes towards AI-assisted language learning, with factors such as AI literacy, prior experience, perceived usefulness, and educational context potentially playing a greater role. The present study addresses this gap by examining whether gender influences undergraduate students' attitudes towards AI-assisted English language learning in selected Nigerian universities, thereby extending current knowledge through context-specific evidence from both federal and state universities in Nigeria.

Methodology

This study adopted a quantitative cross-sectional survey design to examine gender differences in attitudes towards AI-assisted English language learning among undergraduate students in two Nigerian universities. The study was conducted at Obafemi Awolowo University and Osun State University, representing federal and state universities, respectively. The participants comprised 200 undergraduate students enrolled in English Language, English Education, Linguistics, General English, and related language courses at Obafemi Awolowo University and Osun State University. To ensure balanced gender representation, 100 students were selected from each university, with an equal distribution of 50 male and 50 female students. Participants were selected through stratified random sampling, and only students with prior experience using AI-assisted learning tools for English

language learning or academic purposes were included in the study. Data were collected using a structured questionnaire which was adapted from validated instruments measuring learners' attitudes towards AI-assisted language learning and generative AI. It comprised items assessing the perceived educational value of AI, enjoyment and willingness to use AI, confidence in AI-assisted English language learning, and overall attitudes towards AI-assisted English language learning using a five-point Likert scale ranging from Strongly Disagree (1) to Strongly Agree (5). The instrument was reviewed by experts in English language education and educational technology to ensure content validity. Participation was voluntary, and informed consent was obtained from all participants before data collection. Participants were assured of anonymity and confidentiality, and the information collected was used solely for research purposes. Data were analysed using the Statistical Package for the Social Sciences (SPSS), version 29. Descriptive statistics (frequencies, percentages, means, and standard deviations) were used to summarise participants' characteristics and attitudes, while an independent-samples *t*-test was employed to determine whether significant gender differences existed in attitudes towards AI-assisted English language learning. Statistical significance was established at the .05 level.

Results

Table 1: Demographic Characteristics of the Participants (N = 200)

Variable	Category	OAU (f)	UNIOSUN (F)	Total	(f) %
University	Obafemi Awolowo University	100	–	100	50.0
	Osun State University	–	100	100	50.0
Gender	Male	50	50	100	50.0
	Female	50	50	100	50.0
Level of Study	100 Level	25	25	50	25.0
	200 Level	25	25	50	25.0
	300 Level	25	25	50	25.0
	400 Level	25	25	50	25.0
Total		100	100	200	100.00

OAU = Obafemi Awolowo University; UNIOSUN = Osun State University; f = Frequency.

Table 1 presents the demographic characteristics of the participants. The study involved 200 undergraduate students, with equal representation from Obafemi Awolowo University and Osun State University (100 students each). Male and female students were equally represented, each accounting for 50.0% of the sample. Similarly, participants were evenly distributed across the four undergraduate levels, with each level contributing 50 students (25.0%) to the study.

Table 2: Attitudes towards AI-Assisted English Language Learning among Undergraduate Students (N = 200)

Attitude Dimension	Mean (M)	Standard Deviation (SD)	Interpretation
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Perceived educational value of AI	4.11	0.55	Positive
Enjoyment and willingness to use AI	3.96	0.58	Positive
Confidence in AI-assisted English language learning	3.89	0.60	Positive
Overall attitude towards AI-assisted English language learning	3.99	0.51	Positive

Responses were measured on a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

Table 2 shows that undergraduate students demonstrated positive attitudes towards AI-assisted English language learning across all measured dimensions. The highest mean score was recorded for perceived educational value of AI ($M = 4.11$, $SD = 0.55$), indicating that participants recognised AI as a valuable tool for supporting English language learning. Students also reported high levels of enjoyment and willingness to use AI ($M = 3.96$, $SD = 0.58$) as well as confidence in AI-assisted English language learning ($M = 3.89$, $SD = 0.60$). The overall attitude score ($M = 3.99$, $SD = 0.51$) suggests that undergraduate students held favourable attitudes towards AI-assisted English language learning.

Table 3: Independent-Sample *t*-Test of Gender Differences in Attitudes toward AI-Assisted English Language Learning (N = 200)

Gender	Number of Students	Mean (M)	Standard Deviation (SD)	<i>t</i>	<i>td</i>	<i>p</i>
Male	100	3.92	0.53	-1.48	198	.140
Female	100	4.02	0.49			

Statistical significance was determined at the .05 level.

Table 3 presents the comparison of male and female students' attitudes towards AI-assisted English language learning. The results show that female students recorded a slightly higher mean attitude score ($M = 4.02$, $SD = 0.49$) than male students ($M = 3.92$, $SD = 0.53$). However, the independent-samples *t*-test indicated that the difference was not statistically significant, $t(198) = -1.48$, $p = .140$. This suggests that gender did not significantly influence undergraduate students' attitudes towards AI-assisted English language learning.

Discussion

This finding suggests that undergraduate learners increasingly perceive AI as a legitimate educational resource rather than merely a technological novelty, suggesting that AI technologies are increasingly recognised as valuable tools for supporting language development in higher education. The highest mean score for perceived educational value implies that students appreciate AI applications for enhancing learning efficiency, providing immediate feedback, and facilitating independent language practice. This finding is

consistent with Fan and Zhang (2024), who reported that favourable attitudes towards AI-assisted language learning strengthened learners' enjoyment and their intention to continue using AI technologies. Similarly, Biju et al. (2024) found that AI-assisted language assessment enhanced learners' motivation, reduced foreign language anxiety, and improved writing performance. Taken together, these findings suggest that students' positive attitudes towards AI extend beyond technology acceptance to include meaningful educational benefits for English language learning. The present study contributes further evidence from the Nigerian higher education context, where empirical research on AI-assisted English language learning remains limited.

The study also found that female students recorded a slightly higher mean attitude score than male students; however, the difference was not statistically significant. This finding indicates that gender was not a significant determinant of undergraduate students' attitudes towards AI-assisted English language learning. The result supports the findings of Korkmaz and Akbıyık (2024), who reported no significant gender differences in tertiary learners' attitudes towards AI for language learning. It also aligns with Orhan et al. (2025), whose validation of the Generative Artificial Intelligence Attitude Scale showed that learners generally expressed favourable attitudes towards generative AI irrespective of gender. The convergence of these findings suggests that contemporary university students may be responding more to the educational value and accessibility of AI technologies than to gender-related differences in technology use. As AI applications become increasingly integrated into academic activities, factors such as prior experience, digital competence, and perceived usefulness may play a greater role than gender in shaping learners' attitudes.

Overall, the findings extend current knowledge on AI-assisted English language learning by providing evidence from undergraduate students in both a federal and a state university in Nigeria. While previous studies have largely been conducted outside the Nigerian context or have examined AI adoption in higher education more broadly, the present study focuses specifically on attitudes towards AI-assisted English language learning and their relationship with gender. The findings therefore contribute context-specific evidence to the growing literature on AI integration in language education and suggest that AI-assisted learning tools are widely accepted by undergraduate learners regardless of gender.

Conclusion

This study examined gender differences in attitudes towards AI-assisted English language learning among undergraduate students in selected Nigerian universities. The findings revealed that students generally held positive attitudes towards AI-assisted English language learning, recognising its educational value and expressing willingness to integrate AI tools into their language learning activities. Although female students reported slightly higher attitude scores than male students, the difference was not statistically significant, indicating that gender did not meaningfully influence students' attitudes towards AI-assisted English language learning.

The study contributes to the emerging literature on artificial intelligence in language education by providing context-specific evidence from Nigerian universities. The findings suggest that higher education institutions should encourage the responsible integration of AI-assisted learning tools into English language instruction while promoting students' AI literacy and ethical use of these technologies.

The findings should be interpreted within the context of the study, which was limited to undergraduate students from two Nigerian universities and relied on self-reported questionnaire data. Future research may include a wider range of institutions and employ mixed-methods or longitudinal approaches to provide a more comprehensive understanding of students' attitudes towards AI-assisted English language learning.

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