

**THE INFLUENCE OF ARTIFICIAL INTELLIGENCE ON MOBILE LANGUAGE
LEARNING APPLICATION AMONG COLLEGE OF EDUCATION STUDENTS IN
ILORIN, KWARA STATE**

BY

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KWCOED/IL/22/0377

**A RESEARCH PROJECT SUBMITTED TO DEPARTMENTS OF ENGLISH, KWARA
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DECLARATION

I, YAKUB MARIAM TEMITOPE, with matriculation number KWCOED/ IL/22/0377 of the Department of English Economics School of Languages of the Kwara State College of Education, Ilorin hereby declare that this thesis titled “THE INFLUENCE OF ARTIFICIAL INTELLIGENCE ON MOBILE LANGUAGE LEARNING APPLICATION AMONG COLLEGE OF EDUCATION STUDENTS IN ILORIN, KWARA STATE” is a product of my original research work and it has not been presented for any other qualification anywhere. information from other sources (published or unpublished) has been duly acknowledged.

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CERTIFICATION

This thesis titled “THE INFLUENCE OF ARTIFICIAL INTELLIGENCE ON MOBILE LANGUAGE LEARNING APPLICATION AMONG COLLEGE OF EDUCATION STUDENTS IN KWARA STATE ILORIN” by YAKUB MARIAM TEMITOPE (KWCOED/IL/22/0377) has been prepared in accordance with regulations governing the presentation of a project for the award of the NCE of English Economics of the Kwara State College of Education, Ilorin and it hereby read and approved for its contribution to language knowledge and literary presentation,

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ABSTRACT

This study investigates the influence of Artificial Intelligence (AI) on language learning mobile applications among students of the College of Education in Kwara State, Ilorin. It focuses on three primary variables: awareness, perceived effectiveness, and challenges associated with the use of AI-powered language tools. A descriptive survey design was adopted, and data were collected from 256 respondents using a structured questionnaire. The results were analyzed using descriptive statistics and Pearson correlation. Findings reveal that students are generally aware of AI-based language applications, with a moderate positive correlation between awareness and effectiveness ($r = 0.578$). However, perceived effectiveness varied: while some respondents acknowledged the benefits of AI tools in pronunciation and adaptive learning, many disagreed that these apps improved grammar comprehension better than traditional methods (mean = 2.717). A strong positive correlation was found between effectiveness and challenges ($r = 0.638$), indicating that technical and contextual barriers significantly shape the user experience. Challenges such as poor internet connectivity were particularly significant, with 89.06% of respondents indicating that it hindered app usage. This was supported by a high mean score of 4.578. Additional issues like unengaging app design and low motivation further impacted engagement levels. Overall, the study highlights that while AI-powered applications offer potential benefits in language acquisition, their effectiveness is largely dependent on infrastructural reliability, user perception, and contextual suitability.

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CHAPTER ONE

1.0 INTRODUCTION

Background to the Study

1.1 Brief Understanding of Artificial Intelligence

In recent years, the rapid advancement of technology has significantly transformed various aspects of education, including language learning. One of the most notable developments in this area is the integration of Artificial Intelligence (AI) into mobile language learning applications (Godwin-Jones, 2019). These AI-powered applications are designed to enhance language acquisition by providing personalized learning experiences, real-time feedback, adaptive content, and interactive learning environments (Popenici & Kerr, 2017). This innovation is particularly relevant to students in Colleges of Education, where mastering language skills is essential for future teaching careers. In Kwara State, the use of mobile applications for learning languages has become increasingly popular among students due to the convenience, flexibility, and accessibility they offer (Adegbija & Fakomogbon, 2012). With AI technology embedded in these applications, students can now benefit from features such as speech recognition, automatic error correction, language proficiency tracking, and personalized learning paths tailored to their individual needs and learning pace (Hwang et al., 2016). These advancements have the potential to enhance students' language proficiency, foster engagement, and support autonomous learning (Viberg & Grönlund, 2017).

Despite the growing use of AI-powered language learning applications, limited research explores how these technologies influence the learning experiences and outcomes of students in Colleges of Education in Kwara State (Olaniyi & Olutimehin, 2021). Understanding how AI impacts language learning in this context is crucial for educators, policymakers, and app developers to optimize the use of these tools and ensure they align with educational objectives. Therefore, this study seeks to examine Artificial Intelligence's influence on mobile language learning applications among College of Education students in Kwara State. It aims to investigate students' awareness, usage patterns, perceived benefits, and challenges associated with these applications, while also exploring the broader implications for language learning and teacher education.

The advent of digital technology has significantly reshaped the global education landscape, especially in the area of language learning. One of the most recent technological breakthroughs influencing education is Artificial Intelligence (AI). AI technologies are increasingly being embedded in mobile applications to enhance the process of language acquisition, providing learners with personalized learning experiences and enabling self-paced, adaptive learning (Popenici & Kerr, 2017). In the context of language learning, AI-powered applications utilize natural language processing (NLP), speech recognition, and machine learning algorithms to evaluate learners' progress and provide immediate, tailored feedback (Godwin-Jones, 2019). The increasing use of mobile devices in educational settings has facilitated the integration of these AI-powered language learning applications (Viberg & Grönlund, 2017).

Students can now access learning materials anytime and anywhere, creating opportunities for consistent language practice beyond the traditional classroom (Kukulska-Hulme & Viberg, 2018). These applications, such as Duolingo, Babbel, and Memrise, are equipped with adaptive learning technologies that modify the difficulty level of tasks based on individual learners' strengths and weaknesses (Kumar & Rose, 2019). This individualized approach helps students learn at their own pace, which can be especially beneficial for students in Colleges of Education who need to develop strong language skills to effectively teach their future students. In Nigeria, particularly in Kwara State, the proliferation of smartphones among students has made mobile learning applications more accessible (Adegbiya & Fakomogbon, 2012). Many College of Education students use these apps to supplement formal language instruction, leveraging AI-powered features such as voice recognition, grammar correction, vocabulary enhancement, and real-time performance tracking (Hwang et al., 2016).

Given the importance of language proficiency for student-teachers, understanding how AI technology influences their language learning process is essential. Despite the growing adoption of AI in education, particularly in language learning, there is limited empirical research focused on its impact among College of Education students in Nigeria (Olaniyi & Olutimehin, 2021). Most existing studies on AI and language learning apps focus on developed countries, with limited attention given to how these technologies shape learning outcomes in developing contexts like Nigeria (Adeoye & Alao, 2019).

This creates a knowledge gap regarding students' awareness, usage patterns, and perceptions of AI-powered language learning applications in Kwara State, as well as the broader implications for their academic and professional development. Therefore, this study seeks to examine the influence of Artificial Intelligence on mobile language learning applications among College of Education students in Kwara State, contributing to a deeper understanding of how AI can support language learning and teacher preparation in Nigerian educational institutions.

1.2 Statement of the Problem

In recent years, the integration of Artificial Intelligence (AI) into mobile applications has revolutionized the process of language learning, offering students personalized learning paths, real-time feedback, and interactive experiences (Godwin-Jones, 2019). AI-powered language learning applications such as Duolingo, Babbel, and Memrise have become popular globally, as they provide learners with opportunities to practice and improve their language skills at their own pace (Kumar & Rose, 2019). These applications use speech recognition, machine learning algorithms, and Natural Language Processing (NLP) to assess users' performance, identify areas of weakness, and adapt learning content to individual needs (Popenici & Kerr, 2017).

Among students in Colleges of Education who are expected to develop strong language skills to excel in their academic work and future teaching careers, language learning applications have the potential to play a significant role in enhancing proficiency (Adegbija & Fakomogbon, 2012). In Kwara State, the increasing penetration of smartphones and internet connectivity has made it easier for students to access these AI-powered apps (Olaniyi & Olutimehin, 2021). However, despite their potential benefits, there is limited empirical evidence on how these applications influence the language learning experiences, motivation, and outcomes of College of Education students in Kwara State (Adeoye & Alao, 2019). Furthermore, questions remain unanswered regarding students' awareness, extent of usage, perceptions of effectiveness, and the challenges they encounter while using these AI-driven platforms (Viberg & Grönlund, 2017).

There is also insufficient research on whether these applications align with the language curriculum requirements of Colleges of Education in Nigeria, particularly in a multilingual setting like Kwara State, where students may have varying levels of proficiency in English and

indigenous languages (Adegbija & Fakomogbon, 2012). Without addressing these gaps, it becomes difficult for educators, app developers, and policymakers to maximize the potential of AI-powered language learning tools in supporting student-teachers' language development.

1.3 Research Purpose

This study aims to examine the influence of Artificial Intelligence (AI) on mobile language learning applications among College of Education students in Kwara State, with a focus on their awareness, perceived effectiveness, and challenges faced in the language learning outcomes.

The specific of this purposes are as follows:

1. Assess the level of awareness of AI-powered mobile language learning applications among College of Education students in Kwara State.
2. Examine students' perceptions of the effectiveness of AI-powered language learning applications in enhancing their language proficiency.
3. Identify the challenges faced by students in using AI-powered mobile language learning applications.

1.4 Research Questions

The following research questions will guide the study:

1. What is the level of awareness of AI-powered mobile language learning applications among College of Education students in Kwara State?
2. What are the perceptions of College of Education students on the effectiveness of AI-powered language learning applications in enhancing their language proficiency?
3. What challenges do students face in using AI-powered mobile language learning applications?

1.5 Scope and Delimitation

This study focuses on examining the influence of Artificial Intelligence (AI) on mobile language learning applications among College of Education students in Kwara State. Specifically, the study will assess students' awareness of AI-powered language learning

applications, their perceptions of the effectiveness of these applications in enhancing their language proficiency, and the challenges they encounter while using such applications.

The study will be limited to students enrolled in selected Colleges of Education in Kwara State, representing future teachers who are expected to develop strong language skills for their professional development. The research will focus on AI-powered mobile language learning applications, including but not limited to Duolingo, Memrise, Babbel, and other similar apps that incorporate features such as speech recognition, grammar correction, personalized learning pathways, and real-time feedback.

The study will not cover all educational technologies or general mobile learning applications, as its focus is restricted to language learning apps with AI capabilities. Furthermore, the study will only capture students' perceptions and self-reported experiences, and will not conduct in-depth technical evaluations of the applications themselves. The geographical scope is limited to Kwara State, and the findings may not be generalisable to students in other states or other higher institutions such as universities and polytechnics. However, the insights gained from this study will provide valuable information for educators, app developers, and policymakers on how AI-powered language learning apps can support teacher education in Nigeria.

1.6 Significance of the Study

This study is significant as it explores the growing role of Artificial Intelligence (AI) in mobile language learning applications and how these innovations impact the language learning experiences of College of Education students in Kwara State. Understanding students' awareness of these applications, their perceptions of their effectiveness, and the challenges they encounter will provide valuable insights for various stakeholders.

1. For Students: The findings of this study will help College of Education students better understand how AI-powered language learning applications can support their language proficiency development. It may also encourage students to leverage technology more effectively to improve their communication skills, which are essential for their future teaching careers.

2. For Educators and Language Instructors: Language instructors and lecturers will gain insight into how students perceive and use AI-powered language learning applications. This knowledge can help educators recommend appropriate apps, incorporate them into blended learning approaches, and provide guidance on how to use them effectively alongside traditional teaching methods.
3. For App Developers: The study will provide app developers with feedback on how AI-powered language learning applications are being used by students in a Nigerian educational context. Developers can use this information to improve app design, content, and features to better meet the needs of students in Colleges of Education.
4. For Educational Policy Makers: The research will offer policy makers in the education sector insights into how AI technologies are influencing language education in Colleges of Education. These findings can inform policies related to curriculum integration, digital literacy training, and the promotion of educational technology to enhance language learning outcomes.
5. For Future Researchers: The study will contribute to the growing body of literature on AI in education, particularly in the Nigerian context. It will serve as a useful reference for future researchers exploring the intersection of AI, language learning, and teacher education in Nigeria and beyond.

CHAPTER TWO

2.0 Literature Review

This chapter outlines what has been done, what needs further investigation, and helps other researchers not to repeat what previous researchers have already done without giving them credit. It is organized according to the following:

Brief Introduction of AI Language Learning	Conceptual Clarification
The Evolution of Mobile Learning in Language Education	
AI-powered Mobile Language Learning Applications	
Perceived Effectiveness of AI-powered Language Learning Application	
Challenges Faced by Students Using AI-Powered Language Apps	
Awareness of AI-powered Language Learning Apps	
Appraisal of the Literature reviewed	

2.1 Brief Introduction of AI in Language Learning

The integration of Artificial Intelligence into education has gained significant attention globally, particularly in language learning. AI-powered mobile applications have transformed how learners engage with new languages, providing personalised learning experiences, real-time feedback, and adaptive learning paths (Hwang, Chen & Hsu, 2020). This literature review examines existing research on AI-powered language learning applications, with a focus on students' awareness, perceptions of effectiveness, benefits, and challenges, aligning with the selected objectives of this study.

2.2 Conceptual Clarification

2.2.1 Artificial Intelligence (AI)

Artificial Intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think, reason, and learn from experience (Russell & Norvig, 2021). AI systems can perform tasks typically requiring human intelligence, such as problem-solving, pattern recognition, and natural language processing (Jurafsky & Martin, 2021). In the context of language learning, AI technologies allow systems to interact with learners in real-time, provide feedback, personalize learning content, and enhance user engagement (Hwang, Chen & Hsu, 2020).

2.2.2 Mobile Language Learning Applications

Mobile language learning applications are digital platforms accessible via smartphones and tablets, offering language learning opportunities through interactive features such as gamification, quizzes, and real-time feedback (Kukulska-Hulme & Viberg, 2018). Popular applications like Duolingo, Babbel, and Memrise utilize AI to enhance the learning process, providing personalized learning paths and speech recognition for pronunciation improvement (Chen & Hsu, 2020).

2.3 The Evolution of Mobile Learning in Language Education

Mobile-assisted language learning (MALL) has evolved rapidly with advancements in mobile technology. Early applications provided static content such as word lists and flashcards.

However, with AI integration, these apps have evolved into dynamic, adaptive learning environments that cater to individual learners' strengths and weaknesses (Kukulska-Hulme & Viberg, 2018). AI-driven MALL promotes a personalized, self-paced learning experience, making language acquisition more accessible and engaging (Chen & Hsu, 2020).

2.4 AI-powered Mobile Language Learning Applications

The widespread adoption of smartphones and mobile devices has led to a transformative shift in the field of language learning. Mobile learning applications (commonly referred to as m-learning apps) have become a popular tool for learners to acquire and practice new languages. The evolution of mobile language learning applications has progressed rapidly, particularly with the integration of Artificial Intelligence (AI) technologies. AI has not only improved the user experience but also enhanced the personalization, efficiency, and effectiveness of mobile language learning platforms (Zou, Xing & Wang, 2018). Applications such as Duolingo, Babbel, Memrise, and Busuu have become leading examples of AI-driven platforms that offer personalized learning paths, real-time feedback, adaptive content, and intelligent tutoring, all of which contribute to enhanced learning outcomes (Zou, Xing & Wang, 2018).

2.4.1 The Role of Smartphones in Mobile Language Learning

The increasing ubiquity of smartphones has provided a convenient platform for language learners to engage with content anytime and anywhere. As early as the 2010s, researchers noted that mobile technology offered a new level of flexibility and accessibility, which traditional classroom settings could not provide (Kukulska-Hulme & Shield, 2008). The portability of mobile devices, combined with internet connectivity and multimedia capabilities, allowed language learning apps to incorporate audio, video, interactive exercises, and gamification elements. These factors created a more engaging environment for learners (Stockwell & Hubbard, 2013).

2.4.2 Introduction of AI in Mobile Language Learning Apps

AI integration has transformed mobile language learning applications from simple content delivery platforms into intelligent, adaptive systems capable of personalizing the learning process (Huang, Hwang & Chang, 2019). Unlike conventional apps that offer static lessons, AI-

powered apps continuously analyze user behavior, learning patterns, and performance to tailor content to individual learners' needs (Zou, Xing & Wang, 2018). These apps apply machine learning algorithms to predict which words, phrases, or grammar rules a user might struggle with, offering customized practice exercises accordingly (Zou, Xing & Wang, 2018). AI-powered apps can also optimize spaced repetition systems (SRS), which is a widely recognized method for language retention (Wu, Xie & Wang, 2020). By predicting when a user is likely to forget a particular word or concept, the app can strategically reintroduce that content at the right time, reinforcing long-term memory (Yang & Mei, 2018). This AI-driven approach enhances retention rates compared to traditional rote memorization (Yang & Mei, 2018).

2.4.3 Personalized Learning Experiences

Personalization is one of the hallmarks of AI-powered language learning applications. AI algorithms analyze individual learning behaviors, preferences, and strengths, allowing the app to customize lesson difficulty, content focus, and learning pace for each user (Chen, Chen & Lin, 2020). For instance, if a learner consistently struggles with verb conjugation but excels in vocabulary retention, the app will adapt by presenting more grammar-focused exercises. Duolingo, one of the most popular AI-powered language learning apps, uses AI and Natural Language Processing (NLP) to provide real-time feedback and personalized lesson paths (Zou, Xing & Wang, 2018). The app tracks error patterns, identifies weak areas, and dynamically adjusts content difficulty. This personalized scaffolding ensures learners remain challenged but not overwhelmed, which supports sustained engagement and improved learning outcomes (Loewen et al., 2019).

2.4.4 Speech Recognition and Pronunciation Feedback

Another significant AI-driven feature in mobile language learning applications is speech recognition technology, which allows learners to practice pronunciation and receive instant feedback (Li & Hegelheimer, 2013). Apps like Babbel and Busuu use AI-based speech recognition to evaluate user pronunciation and provide corrective feedback. This interactive feature helps learners develop pronunciation accuracy and speaking fluency in a way that traditional textbooks or static e-learning content cannot achieve (Golonka, Bowles, Frank, Richardson & Freynik, 2014). Speech recognition systems rely on deep learning models trained

on vast datasets of native and non-native speech samples. These models can detect pronunciation errors at the phoneme level, allowing for highly granular feedback (Li, 2017). Advanced speech recognition systems also adapt to individual users' accents and gradually refine the feedback to suit their specific learning needs (Wang & Young, 2019).

2.4.5 Adaptive Learning Paths and Intelligent Tutoring Systems

AI-powered mobile applications often employ adaptive learning technologies, which dynamically adjust the learning path based on user performance (Zhou & Wei, 2018). Adaptive learning uses algorithms to analyze the difficulty level of tasks, the time users spend on each exercise, and the frequency of errors to adjust future lesson content (Zhou & Wei, 2018). This feature ensures that each learner follows a personalized learning trajectory, reducing frustration for slower learners while challenging more advanced learners. Memrise, for example, employs AI-powered spaced repetition combined with gamification elements to reinforce vocabulary retention. It tracks the user's memory strength for each word and dynamically prioritizes weaker items in review sessions. This adaptive strategy maximizes retention efficiency while maintaining user engagement (Kang, 2016). AI-powered language learning apps increasingly incorporate Intelligent Tutoring Systems (ITS), which act as virtual language tutors capable of providing context-sensitive hints, explanations, and scaffolding (Chen & Chen, 2021).

2.4.6 Gamification and User Engagement

AI technologies also enhance gamification elements in mobile language learning applications. By analyzing user engagement patterns, AI can dynamically adjust gamified challenges, badges, rewards, and social features to maintain learner motivation (Deterding et al., 2011). Personalized streak reminders, motivational messages, and challenge notifications are all tailored based on learner preferences and behavioral data (Zhang & Lu, 2019). Duolingo's AI-driven gamification engine tracks each user's daily activity and customizes notifications to encourage consistent engagement. The system analyzes which types of rewards (streak freezes, XP bonuses, league promotions) are most effective for each learner and adjusts accordingly (Loewen et al., 2019).

2.4.7 Chatbots and Conversational AI

AI-powered chatbots have also emerged as a significant component of mobile language learning applications. These chatbots simulate realistic conversations, allowing learners to practice real-time dialogue with an AI partner (Fryer & Carpenter, 2006). Unlike static dialogues in traditional apps, AI chatbots leverage natural language generation (NLG) and conversational AI to create contextually appropriate responses tailored to the user's level and learning goals (Griol & Callejas, 2013). Busuu, for example, integrates chatbot-based conversation practice, allowing learners to engage in simulated dialogues based on real-life scenarios such as ordering food, asking for directions, or conducting interviews. These conversations are adaptive, with the chatbot adjusting its responses and difficulty based on the learner's proficiency (Huang et al., 2019).

2.4.8 Data-driven Insights for Continuous Improvement

AI-powered mobile language learning applications also leverage big data analytics to improve their platforms continuously. User data collected from millions of learners provide valuable insights into learning patterns, common errors, and content effectiveness (Zou et al., 2018). Developers use these insights to refine curriculum design, optimize learning algorithms, and personalize content at scale. For instance, Duolingo's AI research team regularly analyzes aggregate user data to identify challenging grammar points, inefficient exercises, and user drop-off patterns. These insights inform updates to content sequencing, exercise design, and gamification mechanics (Loewen et al., 2019). Such data-driven iterative improvement ensures that AI-powered language learning applications remain responsive to learner needs and evolving pedagogical trends.

2.4.9 The Impact on Language Learning Outcomes

Numerous empirical studies have evaluated the effectiveness of AI-powered mobile language learning applications. Research by Huang, Hwang, and Chang (2019) demonstrated that learners using AI-enhanced apps outperformed those using traditional apps in terms of vocabulary retention, grammar accuracy, and speaking fluency. Zou, Xing, and Wang (2018) similarly found that adaptive learning paths and personalized feedback significantly improved learner

engagement and satisfaction. Moreover, self-regulated learning (SRL) strategies are supported by AI-driven features such as progress dashboards, goal-setting tools, and personalized reminders (Zimmerman & Schunk, 2011). These tools help learners monitor their progress, set realistic learning goals, and maintain motivation over time (Chen et al., 2020).

2.5 Perceived Effectiveness of AI-powered Language Learning Applications

Research by Golonka et al. (2014) indicates that learners generally view AI-powered language apps as beneficial, particularly for enhancing listening, speaking, and vocabulary acquisition skills. Similarly, Kumar and Rose (2019) found that students appreciate the flexibility, interactivity, and immediate feedback provided by AI-enhanced apps, which improves their motivation and engagement. However, Adegbija and Fakomogbon (2012) caution that perceived effectiveness often depends on students' familiarity with the technology, their access to stable internet connectivity, and the relevance of content to their curriculum.

2.5.1 Benefits of AI Integration in Mobile Language Learning

1. **Personalized Learning Experience:** AI-driven applications adapt learning paths to fit individual needs, preferences, and proficiency levels (Chen & Hsu, 2020). This personalization helps learners focus on areas needing improvement, enhancing overall learning outcomes (Hwang et al., 2020).
2. **Real-Time Feedback and Assessment:** AI provides immediate feedback on exercises, pronunciation, and grammar, allowing learners to correct mistakes instantly and reinforce correct usage (Hwang et al., 2020).
3. **Flexibility and Accessibility:** Mobile learning applications offer learners the flexibility to practice anytime and anywhere (Kukulska-Hulme & Viberg, 2018). This convenience particularly benefits College of Education students in Kwara State, who may have limited access to traditional classroom language instruction (Aminu, 2021).
4. **Increased Motivation and Engagement:** Gamification elements, personalized rewards, and interactive tasks keep learners motivated. AI ensures these elements align with learners' interests, increasing sustained engagement (Dicheva et al., 2015).

2.6 Challenges Faced by Students using AI-powered Language Apps

Despite their advantages, several challenges hinder the optimal use of AI-powered language learning applications, especially in developing contexts like Nigeria. Chen and Kessler (2020) identify technical issues, such as:

1. **Data Privacy Concerns:** AI applications require access to user data to personalize learning experiences. Concerns about data privacy and misuse of personal information can deter students from fully utilizing these applications (Papadopoulos, Pettenuzzo, & McEwen, 2020).
2. **Limited Contextual Understanding:** Despite advancements in NLP, AI systems still struggle with understanding cultural and contextual nuances, which are crucial in effective language acquisition (Jurafsky & Martin, 2021).
3. **Digital Divide:** In regions like Kwara State, not all students have equal access to smartphones, internet connectivity, or digital literacy skills required to maximize the benefits of AI-powered applications (Aminu, 2021).
4. **Over-Reliance on Technology:** Excessive dependence on AI applications may reduce learners' ability to engage in natural, spontaneous conversations, an essential aspect of language proficiency (Lai & Zheng, 2018)

2.7 Awareness of AI-powered Language Learning Apps

Several studies have highlighted varying levels of awareness of AI-powered learning tools among students, particularly in developing countries. Viberg and Grönlund (2017) found that while students in some Asian and European countries were aware of AI features in language apps, many were unaware of the full potential of these tools. In the Nigerian context, Olaniyi and Olutimehin (2021) reported that awareness of educational technologies is increasing, but specific awareness of AI-driven features remains low among students in tertiary institutions. This suggests a gap in digital literacy that could hinder the effective use of AI-powered language learning apps.

The awareness of AI-powered language learning applications has become an important area of study in educational technology research (Chen & Xie, 2022). As the adoption of mobile

learning tools increases globally, understanding how much students know about the capabilities of these tools—especially their AI-driven features—provides insight into the potential and challenges of integrating artificial intelligence into language education (Wang & Winstead, 2021). Viberg and Grönlund (2017) conducted a comparative study across Asian and European countries to examine how students perceive and use mobile learning technologies, including language learning apps. Their study found that while students in technologically advanced countries were generally familiar with mobile apps for language learning, their awareness of AI-specific features, such as personalized feedback, adaptive learning, and natural language processing, was limited. In countries with advanced digital infrastructure, students were more likely to use basic features, while the AI-powered capabilities often went unnoticed or were underutilized due to limited understanding of their functions. In the African context, and particularly in Nigeria, research on the awareness of AI-powered educational tools is still emerging (Olaniyi & Olutimehin, 2021). Their findings showed that while there is a growing awareness of general educational technology tools, such as learning management systems and video conferencing platforms, awareness of AI-powered features within these tools remains low.

This gap in awareness poses a significant challenge to the effective adoption of AI-powered language learning apps. Addressing this issue requires targeted digital literacy campaigns, workshops, and inclusion of AI literacy in the educational curriculum to help students understand not only how to use language learning apps, but also how to fully benefit from the intelligent features embedded within them (Heil et al., 2020; Sun et al., 2021).

2.8 Appraisal of the Literature Reviewed

The review of relevant literature in this chapter has provided valuable insights into the influence of Artificial Intelligence (AI) on language learning mobile applications (LLMAs), particularly among College of Education students. The reviewed studies underscore the transformative role of AI in delivering personalized, adaptive, and interactive learning experiences that support language acquisition beyond the traditional classroom setting. Several key themes emerged from the literature. First, the concept and capabilities of AI were thoroughly examined, establishing its significance in the modern educational landscape. The literature emphasized the role of AI technologies such as machine learning, natural language processing, and speech

recognition in enhancing the functionality of LLMAs. Applications like Duolingo, Babbel, Memrise, and Busuu were frequently referenced as leading platforms leveraging AI to improve language learning outcomes. Secondly, the review explored students' awareness of these technologies. It was noted that although awareness is generally high in developed regions, it remains relatively low in developing contexts such as Nigeria due to infrastructural and institutional limitations. This highlights a potential barrier to the adoption and effectiveness of AI-powered educational tools in these regions. Thirdly, the perceived effectiveness of AI-based language learning tools was assessed. Studies revealed that features such as real-time feedback, gamification, and personalized content significantly enhance student engagement and learning efficiency. However, user satisfaction and effectiveness were also found to be influenced by the quality of the app's interface, content relevance, and alignment with the learners' academic goals.

Furthermore, the challenges faced by students in using AI-powered language learning applications were critically discussed. These include technical issues, financial barriers, low digital literacy, and concerns about content relevance and data privacy. Such challenges are particularly pronounced in low-resource educational settings, pointing to a need for context-specific design and policy support. While the literature provides a strong theoretical foundation using frameworks such as the Technology Acceptance Model (TAM), there is a noticeable gap in empirical studies focused specifically on Colleges of Education in Nigeria, especially in Kwara State. Most studies concentrate on university students or learners in more technologically advanced environments. Therefore, this study aims to fill that gap by exploring how AI-powered language learning tools are understood, perceived, and utilized by students in this unique context.

In summary, the literature provides robust theoretical and empirical insights but also reveals several gaps that this study seeks to address. These include localized research and contextual challenges in the Nigerian educational setting. The current research builds on these findings to explore the specific case of College of Education students in Kwara State, thereby contributing to a more inclusive understanding of AI's role in language learning.

CHAPTER THREE

3.0 Research Methodology

This chapter outlines how the research was designed, how data were collected and analyzed, and why specific methods were chosen. It is organized according to the following:

Research Design

Population of the Study

Sample and Sampling Techniques

Instruments for Data Collection

Validity of the Instrument

Reliability of the Instrument

Method of Data Collection

Method of Data Analysis

3.1 Research Design

The research design adopted for this study is the descriptive survey research design. A descriptive survey is a method used to obtain information concerning the current status of the phenomenon to describe what exists with respect to variables or conditions in a situation. It enables the researcher to gather data from a relatively large population using standardized instruments and to analyze such data statistically. This design is especially suitable for this research, which seeks to assess the influence of Artificial Intelligence (AI) on language learning mobile applications among students of Colleges of Education in Kwara State. The research does not aim to manipulate any variables but rather to observe and analyze how students use and perceive AI-based language learning tools. This non-experimental approach makes it possible to gather opinions, perceptions, and experiences in a natural educational setting. Additionally, descriptive surveys are efficient in providing rich data that can inform decision-making and policy formulation in education and technology integration. They are also cost-effective and appropriate for cross-sectional studies, where the aim is to generalize findings to a larger population from a representative sample.

3.2 Population of the Study

The population of this study includes all students in the School of Language at the College of Education, Kwara State, Ilorin. The institution was chosen because it is a key center for teacher training in the state, especially in language education. The study focused on students enrolled in departments such as English Language, Yoruba, French, and Arabic Education. These departments were selected because students studying languages are more likely to use or benefit from AI-powered mobile applications designed for language acquisition. The estimated population of students in the School of Language at the institution is about 700.

3.3 Sample and Sampling Techniques

A sample of 255 students was selected for the study. The sampling method employed was stratified random sampling, which allows for equal representation of sub-groups population. In this study, the strata were based on the students' departments: English, Yoruba, French, and Arabic. Each department was treated as a separate stratum. Within each stratum, students were selected using simple random sampling. This ensured that all students in each department had an equal chance of being selected. This combination of stratification and randomization helps

reduce sampling bias and ensures the representativeness of the sample. In addition, the sample was balanced across gender, academic levels (e.g., NCE I, II, III), and age groups between 18 years to 30 years to improve generalizability.

The sample size was determined using Yamane's formula (1967), which provides a reliable method for determining sample sizes in finite populations. Using a population size of 700 students and a margin of error of 5% (0.05), the formula produced a required sample size of approximately 255 students.

Sample Size Determination

The sample size was determined using Yamane's formula (1967):

$$n = \frac{N}{1 + N(e)^2}$$

Where:

- n = sample size
- N = population size (300 students)
- e = margin of error (5% = 0.05)

$$n = \frac{700}{1 + 700(0.05)^2} = \frac{700}{1 + 1.75} = \frac{700}{2.75} \approx 254.5$$

3.4 Instruments for Data Collection

The primary research strategy used in this study is the administration of structured questionnaires to respondents. The structured questionnaire contained closed-ended questions, which allowed students to select from predefined options. This ensured that responses were standardized, making it easier to compare data across respondents and analyze results statistically (Bolarinwa, 2021). The questionnaire was distributed via online platforms, improving the response rate (Revilla & Ochoa, 2022). The questions were designed to address key research areas, including students' awareness of AI-powered language learning

applications, their perceptions of the usefulness and ease of use, their experiences with such applications, and the challenges they encounter.

3.5 Validity of the Instrument

The validity of the instrument was ensured through both face and content validation processes. The questionnaire was submitted to an expert in Language Education. The expert assessed whether the questionnaire adequately covered all aspects of the research objectives. Suggestions from the reviewer led to adjustments in item wording, elimination of ambiguous items, and reordering of some questions to improve logical flow and clarity. The expert's contribution helped ensure that the instrument measured what it was intended to measure.

3.6 Reliability of the Instrument

To ascertain the reliability of the questionnaire, a pilot test was conducted involving 10 students from Kwara State College of Arabic and Islamic Legal Studies, Oro. This institution was chosen because it also includes a language-focused curriculum, but was not included in the main study. The responses from the pilot test were subjected to statistical analysis using the Pearson reliability test.

3.7 Method of Data Collection

Data collection was conducted online by the researcher. Before administration, the study's purpose was clearly explained to the students, and informed consent was obtained. Ethical standards were strictly maintained, with assurances of confidentiality, anonymity, and voluntary participation. Respondents were encouraged to provide honest answers. The online distribution and submission of the questionnaire enhanced response rates and ensured broad departmental coverage.

3.8 Method of Data Analysis

The data collected were analyzed using both descriptive statistics, such as frequency counts and percentages were used to summarize and interpret responses to the research questions. Cross-tabulations were also used to identify patterns and correlations in the data, and graphical representations such as bar charts and pie charts were used to visualize the data for better interpretation.

CHAPTER FOUR

4.0 Data Presentation, Analysis, and Interpretation

This chapter presents the data collected from respondents, the analysis of the results, and the interpretation of the findings in line with the study objectives.

4.1 Presentation of Research Questions

4.1.1 Research Question One: What is the level of awareness of AI-powered mobile language learning applications among College of Education students in Kwara State? As shown in table 4.2 and illustrated in Figure 4.1, a majority of respondents (73%) reported being "Very aware" of mobile apps that use Artificial Intelligence (AI) for language learning. An additional 10.9% indicated they were "Aware", suggesting that overall, a significant portion of the students have been exposed to or have interacted with such apps.

Table 4.2 Frequency Distribution of Awareness Responses

Response	Frequency	Score	Mean	Percentage
very aware	181	5	3.65	73.04
Aware	28	4	0.45	10.95
Neutral	14	3	0.164	5.41
Slightly aware	20	2	0.156	7.81
Not aware	1	1	0.021	2.15
Total	256	-	4.421	100

Awareness of mobile apps that use artificial intelligence for language learning.

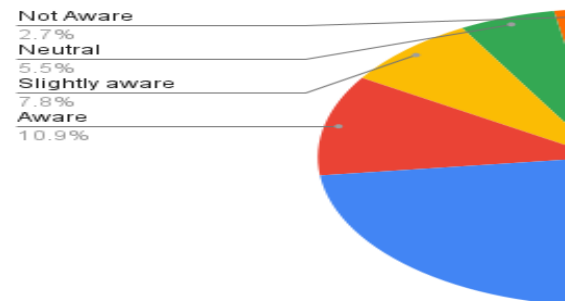


Figure 4.1 Awareness of mobile apps that use artificial intelligence for language learning.
Source : Yakub, (2025)

2. Familiarity with AI Functionality

In Figure 4.2, 62.5% of respondents identified as simply "Aware" of how AI works within these apps, while 17.6% reported being "Very aware". However, a combined 19.9% selected "Neutral," "Slightly aware," or "Not Aware", suggesting that although exposure is high, deeper understanding of AI functionality remains moderate, which may reflect a gap between usage

and technical comprehension. The data in Table 4.2 shows a breakdown of the participants' perceived familiarity with AI functionality of AI in enhancing language learning.

Table 4.2 Level familiarity with AI in Language Learning Apps

Response	Frequency	Score	Mean	Percentage
very aware	45	5	0.879	17.6
Aware	160	4	2.5	62.5
Neutral	10	3	0.188	6.3
Slightly aware	20	2	0.205	10.2
NOT aware	9	1	0.055	3.5
Total	250	-	3.805	100

Source: Yakub, (2025)

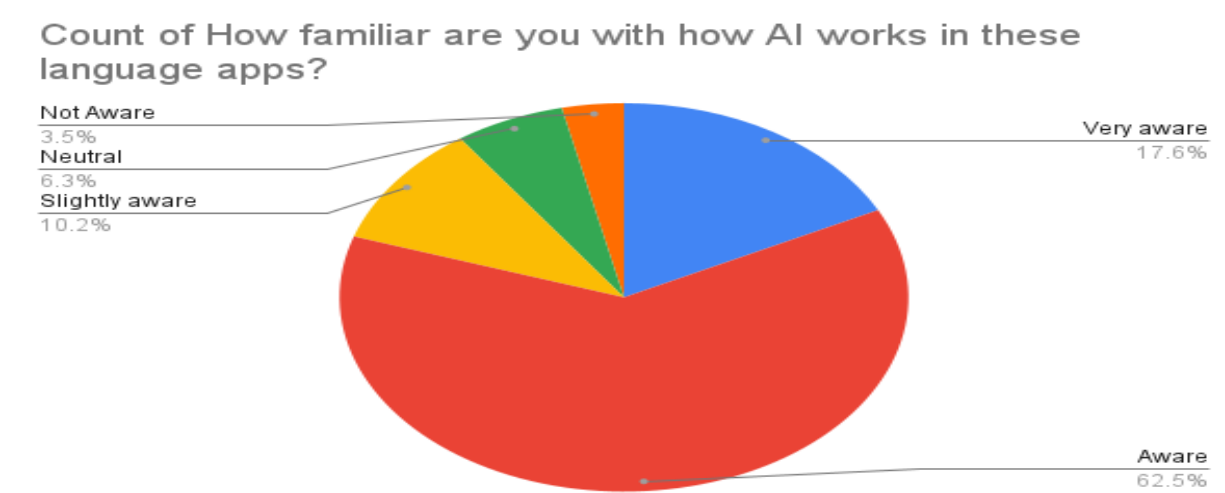


Figure 4.2: Level of Technical Understanding of AI in Language Learning Apps
Source: Yakub, (2025)

3. Frequency of Use

As shown in Figure 4.3, 59.8% of respondents use these apps "Daily", and 14.1% use them "Monthly". Only 12.9% use them "Occasionally", and a small portion (13.2%) reported "Never" using them. This indicates that AI-powered apps are not just known, but actively used, suggesting they are becoming part of students’ regular learning habits.

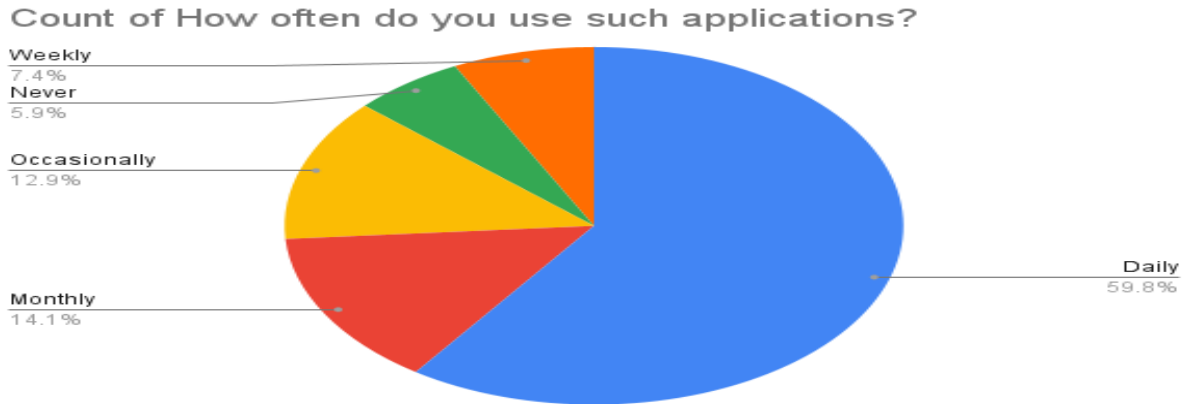


Figure 4.3 usage of AI applications across College of Education Students, Ilorin.
Source: Yakub, (2025)

4. Source of Awareness

According to Figure 4.4, 69.1% of students first heard about AI language apps via social media, while 17.2% mentioned friends. Other sources such as lecturers and app stores accounted for a smaller percentage. This indicates that peer networks and online platforms play a dominant role in AI app dissemination, rather than formal institutional channels.

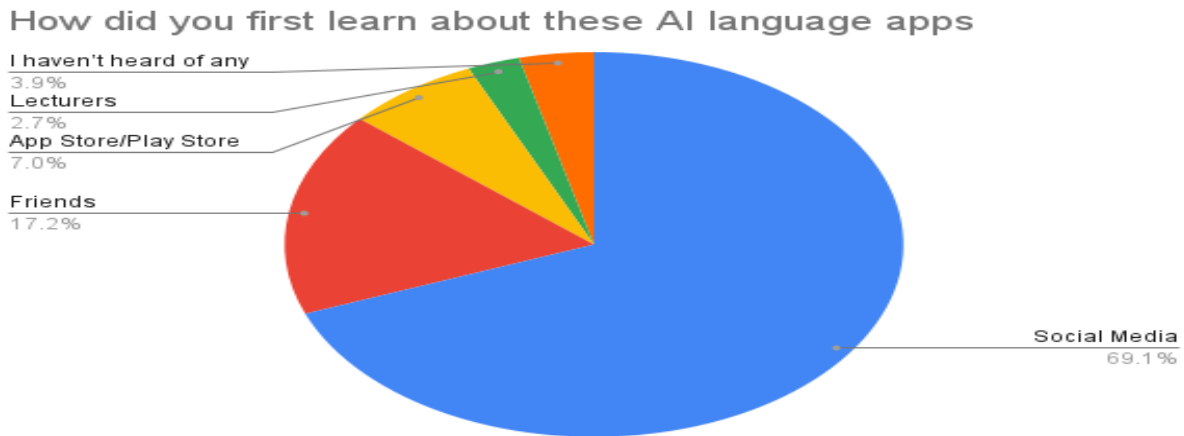


Figure 4.4: Channels Through Which COED Students First Learned About AI Language Apps
Source: Yakub, (2025)

Interpretation:

The Likert scale questions analyzed in Microsoft Excel yielded a mean score of 3.95 out of 5, which corresponds to 79.16%. This result indicates that students in the College of Education, Kwara State, demonstrate a high level of awareness and regular usage of AI-powered mobile language learning applications. Nevertheless, the findings also reveal a noticeable gap in deeper technical understanding of how these AI tools function, suggesting an area for future capacity

building. Additionally, the data show that social media serves as the predominant source of awareness among students. This highlights the importance of educational institutions taking a more proactive role in introducing and guiding students on the effective use of AI-driven tools for language learning.

4.1.2 Research Question Two: What are the perceptions of College of Education students on the effectiveness of AI-powered language learning applications in enhancing their language proficiency?

This section explores the perceived impact of AI language learning tools on learners’ confidence, identifies which AI features are considered most useful, and evaluates overall effectiveness using a Likert-scale analysis.

1. Confidence in Language Speaking

As shown in Figure 4.6, when asked whether they feel more confident speaking a new language after using AI-based apps, 23.8% of participants responded *Yes*, while a majority (61.7%) chose *Maybe*. A smaller portion (14.5%) stated *No*. These results suggest that while a portion of users do experience increased confidence, a significant number remain unsure. The high rate of uncertainty may imply that while AI tools contribute to knowledge acquisition, they may not adequately support spontaneous speaking or oral fluency, skills that often require interactive, real-world practice.

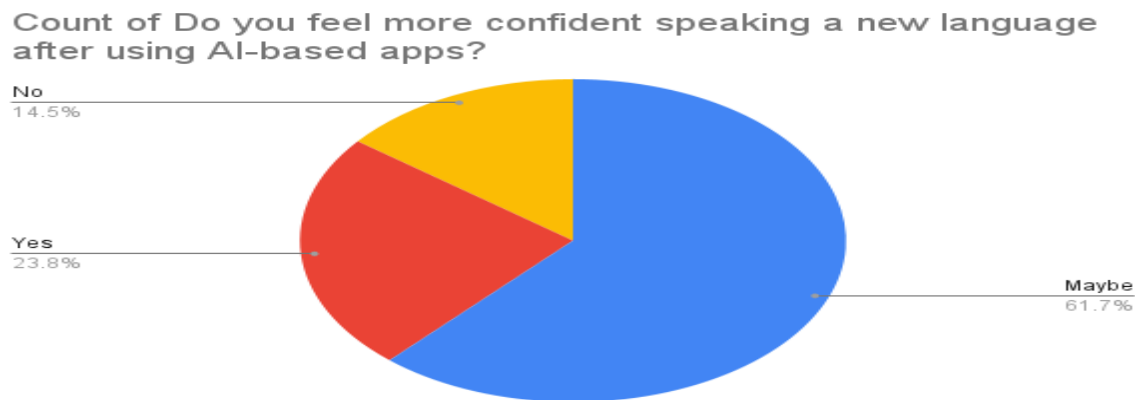


Figure 4.6: Confidence in Speaking a New Language After Using AI-Based Apps
Source: Yakub, (2025)

2. Effectiveness of AI Language Learning Applications

This section evaluates the perceived effectiveness of AI-powered language learning tools in supporting learners' development, particularly in speaking, motivation, and feedback. Data was collected using a five-point Likert scale and further visualized through frequency distribution charts. The computed mean score of 3.609, equivalent to 72.18%, indicates a moderate to high level of perceived effectiveness.

I. Improvement in Pronunciation and Speaking Skills

As illustrated in Figure 4.7, when respondents were asked whether AI-powered language learning applications improved their pronunciation and speaking skills, a total of 172 out of 256 selected *Neutral*, indicating uncertainty. Meanwhile, 38 respondents selected *Strongly Agree*, and 29 chose *Agree*, suggesting that a modest proportion of users perceived notable improvement in their speaking abilities. Only a small number of participants expressed disagreement (*Disagree* or *Strongly Disagree*). This distribution implies that although a subset of users finds AI tools beneficial for speaking development, the majority remain unconvinced or neutral. This could point to a lack of emphasis on oral practice features within current AI applications or a perceived inadequacy in tools such as chatbots or voice recognition systems to authentically simulate real-world conversation. To enhance learner outcomes, future iterations of these apps may need to integrate more immersive and responsive speaking interfaces. Table 4.3 presents the responses obtained from respondents regarding effectiveness of AI-powered language learning applications to improve pronunciation and speaking skills.

Table 4.3: Distribution of responses based on improvement in pronunciation and speaking skills

Response	Frequency	Score	Mean	Percentage
Strongly agree	38	5	0.14	14.84
Agree	29	4	0.45	11.52
Neutral	172	3	2.02	67.18
Disagree	11	2	0.086	4.50
Strongly Disagree	6	1	0.023	2.54
Total	256	-	3.519	100

Source: Yakub, (2025)

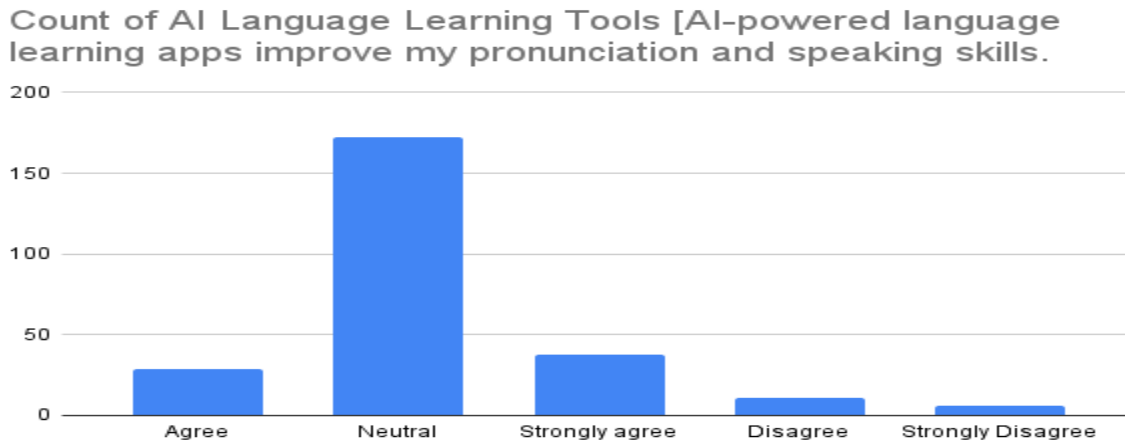


Figure 4.7 Learner Perception of Improvement in Pronunciation and Speaking Skills Using AI Language Apps
Source: Yakub, (2025)

II. Motivation to Learn Regularly

As shown in Figure 4.8, the majority of respondents reported feeling motivated to learn regularly through the use of AI language learning apps. Specifically, 169 respondents selected *Agree* and 41 chose *Strongly Agree*. A smaller proportion expressed uncertainty, while 15 respondents selected *Disagree* and 7 *Strongly Disagree*. This response pattern reflects a strongly positive trend, indicating that AI-powered platforms are perceived as effective in sustaining user motivation. This may be attributed to features such as gamification elements, personalized learning trajectories, and immediate, adaptive feedback loops. Since motivation is a well-established determinant of success in second language acquisition, these findings suggest that AI applications are supporting learners in maintaining regular study habits and long-term engagement with language content. Table 4.4 presents the responses obtained from respondents regarding motivation to learn regularly using AI-powered language learning applications.

Table 4.4: Evaluation of Respondents' Motivation to learn regularly using AI in Language Acquisition

Response	Frequency	Score	Mean	Percentage
Strongly agree	41	5	0.80	16.02
Agree	169	4	2.64	66.02
Neutral	24	3	0.28	9.58
Disagree	15	2	0.12	5.80
Strongly Disagree	7	1	0.05	2.75
Total	256	-	5.87	100

Count of AI language learning apps keep me motivated to learn regularly.

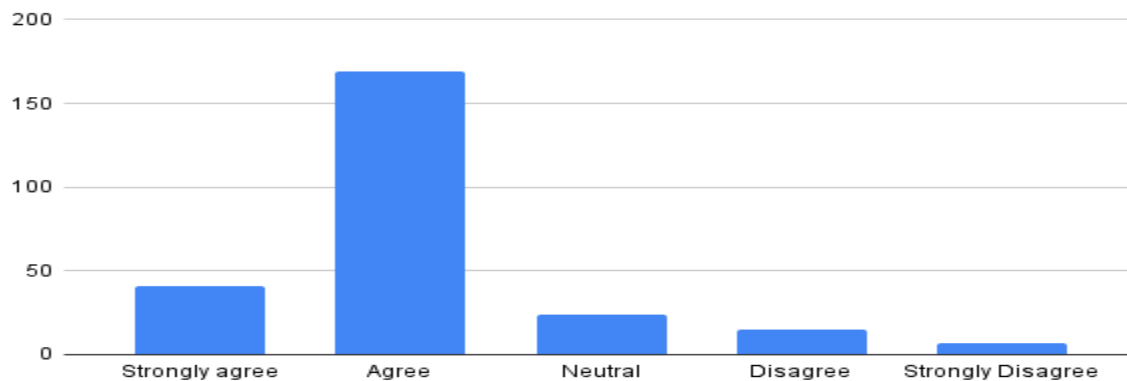


Figure 4.8 Learner Motivation Levels When Using AI-Powered Language Apps
Source: Yakub, (2025)

III. Perceived Usefulness of AI Feedback for Learning

As depicted in Figure 4.9, majority of respondents reported that the feedback provided by AI language learning apps was beneficial to their learning. As shown in table 4.5, 184 respondents selected *Strongly Agree*, while 43 chose *Agree*. Fewer participants expressed neutrality and only 10 and 4 respondents selected *Disagree* and *Strongly Disagree*, respectively. This strong positive sentiment underscores the central importance of timely and tailored feedback in language learning. The effectiveness of AI-generated feedback likely lies in its ability to deliver immediate and consistent error correction, helping learners identify and address mistakes in real time. Furthermore, structured and concise AI responses may offer greater clarity and precision than traditional peer or instructor feedback, especially in self-paced or independent learning contexts. These findings support the integration of intelligent feedback systems in digital learning tools as a key contributor to perceived academic progress.

Table 4.5: Response Summary on Perceived Usefulness of AI Feedback for Learning Tools.

Response	Frequency	Score	Mean	Percentage
Strongly agree	184	5	3.59	71.88
Agree	43	4	0.67	16.80
Neutral	15	3	0.18	5.80
Disagree	10	2	0.08	3.9
Strongly Disagree	4	1	0.016	1.50
Total	256	-	4.256	100

Source: Yakub, (2025)

Count of I find the feedback provided by AI language apps helpful for my learning

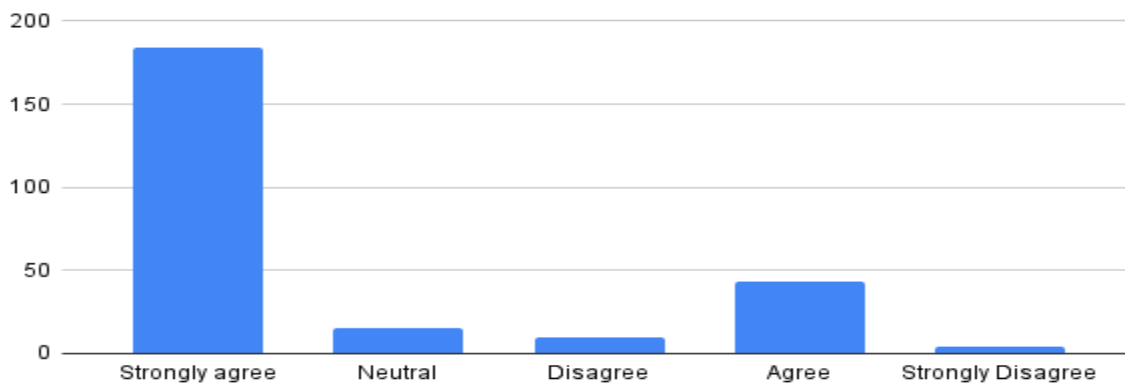


Figure 4.9 Usefulness of Feedback from AI Language Learning Tools

Source: Yakub, (2025)

IV. Grammar Comprehension than Traditional Classroom Learning.

As presented in Table 4.6 and visually illustrated in Figure 4.10, the perception that AI-powered language applications enhance grammar comprehension more effectively than traditional classroom learning received limited support from respondents. While 13.3% strongly agreed and 11.7% agreed, a significant 61.3% disagreed, and 2.7% strongly disagreed, reflecting skepticism about the comparative advantage of AI tools in this area. The mean score of 2.717 further emphasizes a leaning toward disagreement, suggesting that most learners still consider traditional methods more effective for grammar acquisition.

Table 4.6: Response Summary on Perceived Usefulness of AI Grammar Comprehension to Traditional Classroom Learning.

Response	Frequency	Score	Mean	Percentage
Strongly agree	34	5	0.66	13.3
Agree	30	4	0.47	11.7
Neutral	28	3	0.33	10.9
Disagree	127	2	1.23	61.3
Strongly Disagree	7	1	0.027	2.7
Total	256	-	2.717	100

Source: Yakub, (2025)

Count of AI language learning applications have helped me understand grammar better than traditional classroom learning

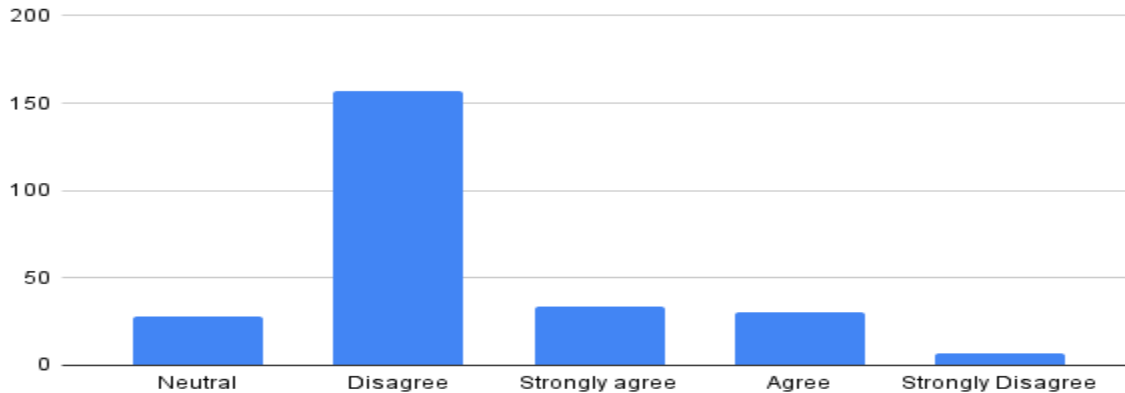


Figure 4.10 Usefulness of AI in grammar comprehension to traditional classroom
Source: Yakub, (2025)

3. Most Useful AI Features

When asked to identify the most useful AI feature (Figure 4.8), a majority (69.5%) of respondents selected grammar correction, followed by speech recognition (12.9%), adaptive learning (9%), and chatbot conversation (5%). A small percentage (3.5%) selected *None*, indicating that most users find at least one feature beneficial. These findings reveal that learners value features that offer precise, corrective feedback on language structure. In contrast, interactive components like chatbots received minimal preference, possibly due to limitations in conversational accuracy or perceived unnaturalness in dialogue flow.

Count of Which AI feature do you find most useful?

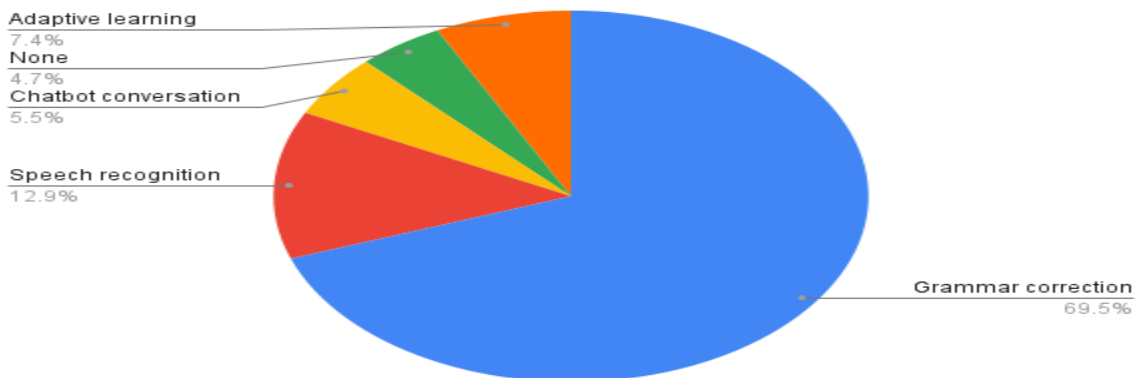


Figure 4.11 Most Useful AI-Powered Features According to Respondents

Source: Yakub, (2025)

Interpretation:

The analysis of learner perceptions in this section supports the overall finding that AI-powered language learning apps are effective, particularly in terms of motivation and feedback. The computed Likert mean of 3.609 (72.18%) affirms a strong perceived benefit. However, the high proportion of *Neutral* responses regarding speaking skill improvement suggests that this remains a relatively underdeveloped area. Future improvements should focus on enhancing real-time pronunciation feedback and providing more interactive speaking opportunities through speech synthesis and conversational AI. Overall, the data suggests that AI apps effectively support language learning through motivation and feedback, but could do more to directly impact oral fluency and pronunciation development.

4.1.3 Research Question Three: What challenges do students face in using AI-powered mobile language learning applications?

This section presents and discusses the challenges faced by users when interacting with AI-based language learning applications. The findings are based on responses from 256 participants and analyzed both qualitatively (through pie and bar charts) and quantitatively using a five-point Likert scale. The computed mean score of 3.5937, or 71.8%, indicates a moderately high level of concern regarding usage challenges.

1. Technical Challenges and Internet Affordability

As illustrated in Figure 4.12, a significant majority (67.6%) of respondents reported that they *sometimes* face technical challenges while using AI language apps, such as crashing or freezing. A smaller percentage indicated they experience such issues *rarely* (7%) or *never* (5%). Meanwhile, 14.5% reported experiencing technical issues *often*, and 5.9% selected *always*. This suggests that technical instability, while not overwhelmingly persistent, is a common issue that could hinder learning flow and engagement.

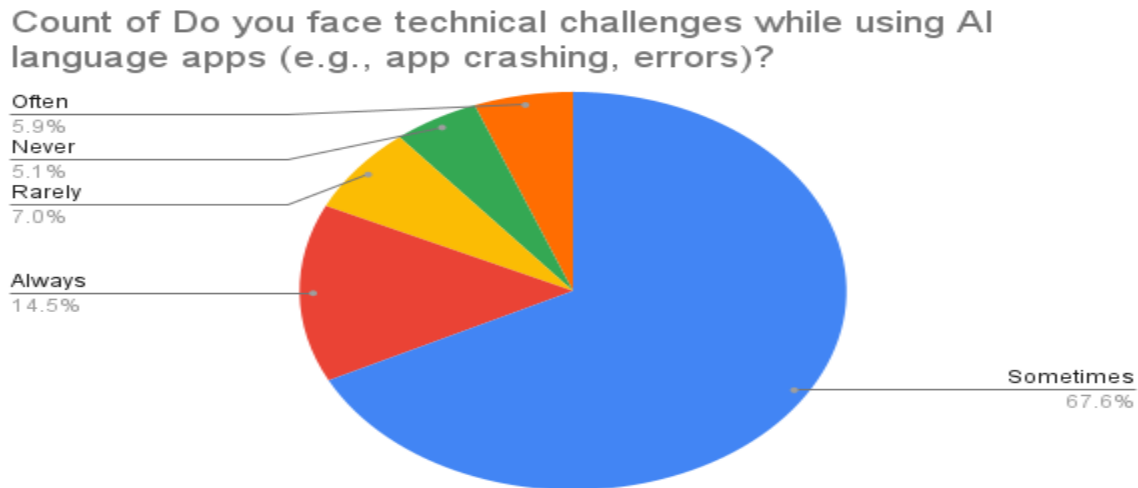


Figure 4.12: Frequency of Technical Challenges Encountered Using AI-Powered Apps

Source: Yakub, (2025)

In terms of internet affordability, Figure 4.13 shows that 76.2% of respondents find it difficult to afford consistent internet access to use these applications. Only 12.9% disagreed, and 10.9% were uncertain. This result underscores internet cost as a major systemic barrier, especially in regions where mobile data or broadband services are expensive or unreliable.

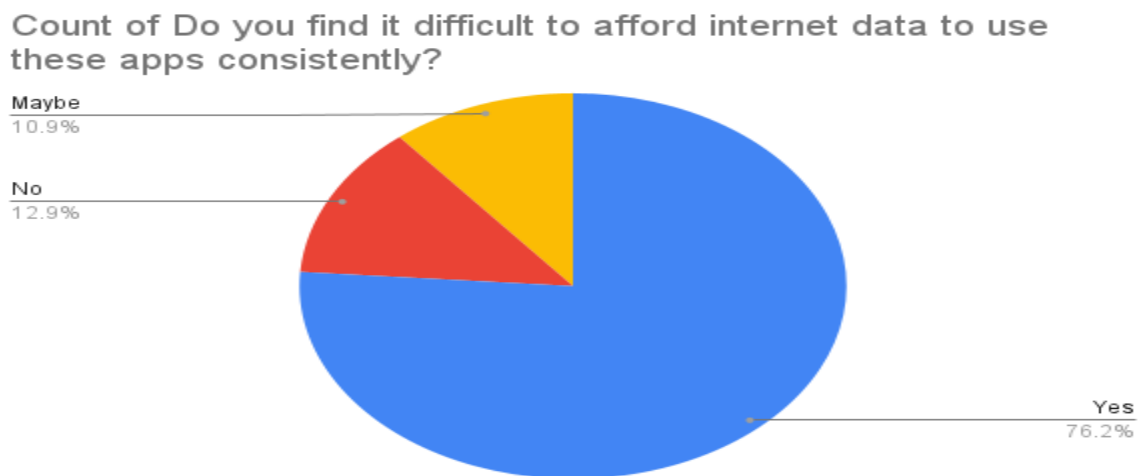


Figure 4.13: Difficulty Affording Internet Data to Use AI Language Apps

Source: Yakub, (2025)

2. Usability and Cultural Relevance

In terms of usability, Figure 4.14 demonstrates that 70.7% of users find the app instructions and feedback *always* easy to understand, while 15.6% selected *often*. Very few respondents indicated *rarely* or *never*, which reinforces the general clarity of these platforms. This reflects positively on the design and instructional user interface of most AI language apps.

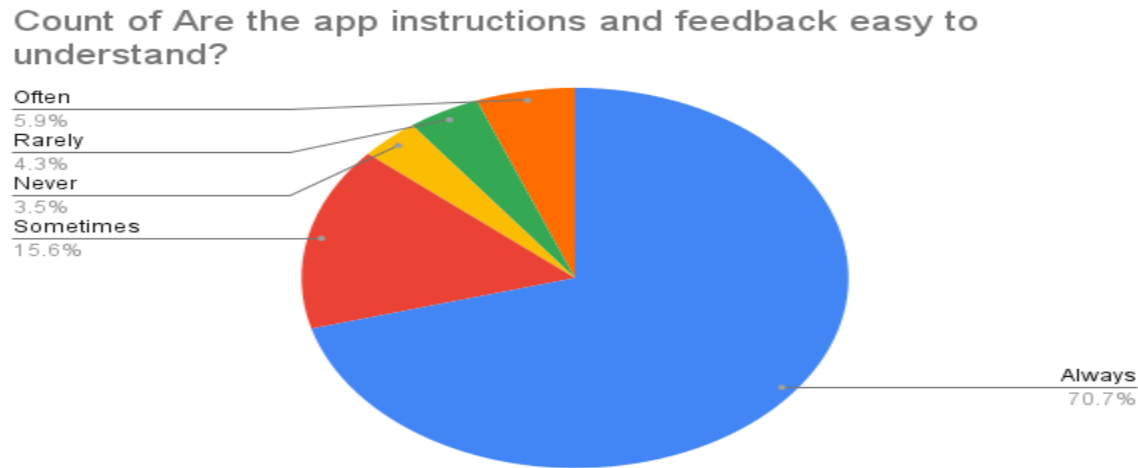


Figure 4.14 Ease of Understanding Instructions and Feedback from AI Language Apps
Source: Yakub, (2025)

Cultural relevance is also a key factor in the adoption and effectiveness of AI tools. As seen in Figure 4.15, a substantial 78.9% of respondents believe that these apps are culturally relevant and tailored to their learning needs. Only 12.1% responded *no*, with 9% selecting *maybe*. This suggests that most users feel represented and supported by the app content, although a small proportion still sees room for improvement in localization or context-specific materials.

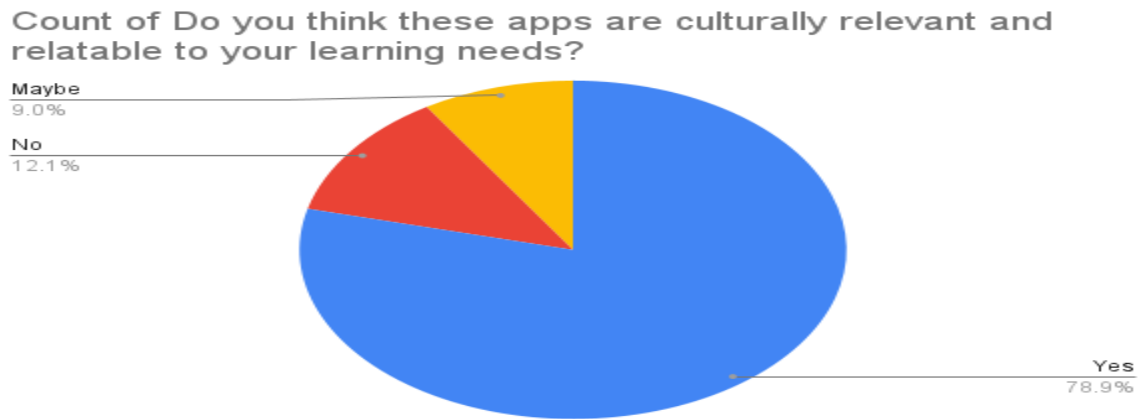


Figure 4.15: Perception of Cultural Relevance and Relatability of AI Language Apps

Source: Yakub, (2025)

3. Specific Challenges Rated on a Likert Scale

This section presents a detailed interpretation of challenges associated with AI-powered language learning applications, based on survey responses collected using a five-point Likert scale. The findings indicate an overall challenge mean rating of 3.59 out of 5, equivalent to 71.8%, suggesting a moderately high level of concern among users.

I. Poor Internet Connectivity

The results in Table 4.7 indicate that poor internet connectivity is a major barrier to the effective use of AI-powered language learning applications. A significant 74.22% of respondents strongly agreed, while 14.84% agreed, amounting to a combined 89.06% who reported that internet access issues impede their ability to use these tools efficiently. The mean score of 4.578 out of 5 confirms that this issue is both widespread and strongly felt. In contrast, only 5.08% of respondents disagreed or strongly disagreed, and a minimal 5.86% remained neutral.

This pattern, also evident in the bar chart in Figure 4.16, suggests that the effectiveness of AI-powered apps is closely tied to infrastructural conditions particularly in areas with unreliable or expensive internet access. Features that rely on real-time interaction, such as instant feedback, voice recognition, and adaptive lessons, may become inaccessible or frustrating to use under poor network conditions. Therefore, improving offline capabilities, enabling data-efficient modes, or ensuring broader internet penetration could significantly enhance user experience and learning outcomes.

Table 4.7: Students' Responses on Internet Connectivity as a Challenge

Response	Frequency	Score	Mean	Percentage
Strongly agree	190	5	3.71	74.22
Agree	58	4	0.59	14.84
Neutral	15	3	0.18	5.80
Disagree	11	2	0.09	4.50
Strongly Disagree	2	1	0.008	0.78
Total	256	-	4.578	100

Source: Yakub, (2025)

Count of Poor internet connection is a major challenge for me when using AI-powered language apps.

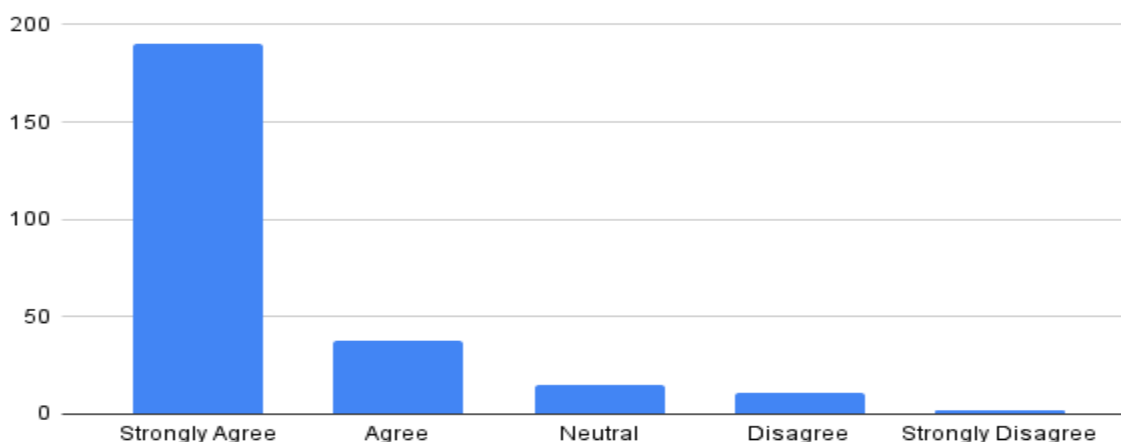


Figure 4.16: Bar Chart Showing Responses on Poor Internet Connectivity

Source: Yakub, (2025)

II. Lack of Motivation to Use AI Apps

Another notable challenge examined in this study is the lack of learner motivation when engaging with AI-powered language learning applications. Table 4.8 reveal that 68.36% of respondents agreed and 15.23% strongly agreed that lack of motivation hinders their frequent use of AI-powered language tools, resulting in a combined 83.59% affirming this challenge. Meanwhile, 8.20% disagreed, 0.78% strongly disagreed, and 7.42% remained neutral. As illustrated in Figure 4.17, the responses suggest that while the tools may be technologically advanced, user engagement is significantly influenced by psychological and behavioral factors. Learners may struggle with consistency, lose interest over time, or lack external encouragement

to continue their usage. These motivational gaps can reduce the effectiveness of AI tools, especially in self-directed learning environments where user persistence is critical. To address this, developers and educators could explore gamification, personalized reminders, goal-setting features, and community-driven learning to boost user commitment and create a more engaging learning experience.

Table 4.8: Students’ Responses on Motivation as a Challenge

Response	Frequency	Score	Mean	Percentage
Strongly agree	39	5	0.70	15.25
Agree	175	4	2.75	68.50
Neutral	19	3	0.22	7.42
Disagree	21	2	0.10	8.20
Strongly Disagree	2	1	0.008	0.78
Total	256	-	5.878	100

Source: Yakub, (2025)

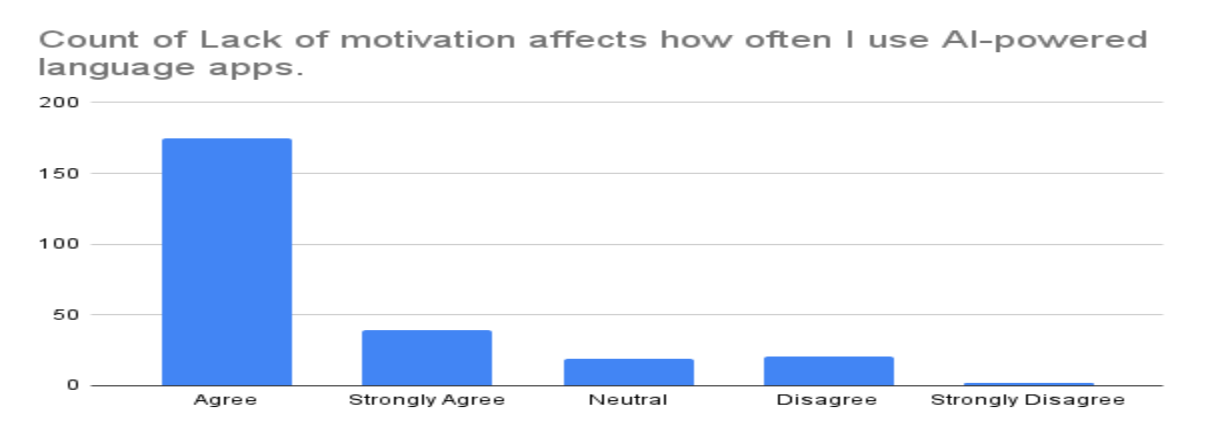


Figure 4.17: Bar Chart Displaying Perceptions of Motivation as a Barrier

Source: Yakub, (2025)

III. Difficulty Understanding AI Feedback

A review of responses in Table 4.9 and Figure 4.18 shows that most participants do not struggle with understanding feedback from AI-powered language learning apps. Only 22.25% agreed or strongly agreed that they find it difficult, while a majority of 66.02% disagreed. The mean score of 2.65 further supports this, suggesting low overall concern. Though a minority reports challenges, the data implies that feedback is generally clear. Even so, simplifying technical

feedback and offering visual or example-based explanations could improve accessibility for all users.

Table 4.9: Students’ Responses on Difficulty Understanding AI Feedback as a Challenge

Response	Frequency	Score	Mean	Percentage
Strongly agree	29	5	0.57	11.52
Agree	28	4	0.44	10.95
Neutral	30	3	0.33	11.72
Disagree	161	2	1.20	62.89
Strongly Disagree	8	1	0.05	3.125
Total	256	-	2.63	100

Source: Yakub, (2025)

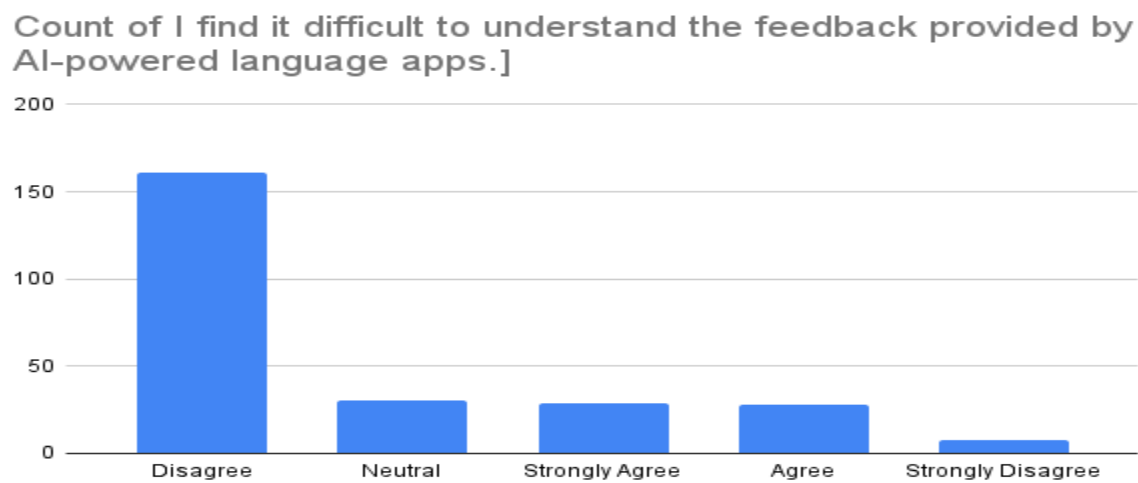


Figure 4.18: Relationship Between Understanding AI Feedback and Frequency of App Use

Source: Yakub, (2025)

IV. App Design Issues

The findings in Table 4.10 and Figure 4.19 highlight that app design issues are not widely perceived as a major challenge by most respondents. While 13.70% strongly agreed and 10.20% agreed that poor design affects their usage of AI-powered language apps, a significant 67.60% remained neutral, suggesting uncertainty. The mean score of 3.273 further reflects this neutral stance. Only a small proportion of participants disagreed (6.25%) or strongly disagreed (2.34%), indicating limited dissatisfaction. Overall, these results suggest that while some users may

experience design-related difficulties, it is not a dominant barrier for the majority of respondents.

Table 4.10: Students’ Responses on App Design Issues as a Challenge

Response	Frequency	Score	Mean	Percentage
Strongly agree	33	5	0.68	13.70
Agree	20	4	0.41	10.20
Neutral	175	3	2.03	67.60
Disagree	16	2	0.13	6.23
Strongly Disagree	6	1	0.023	2.34
Total	250	-	3.273	100

Source: Yakub, (2025)

Count of App design makes it difficult for me to use AI-powered language apps effectively.]

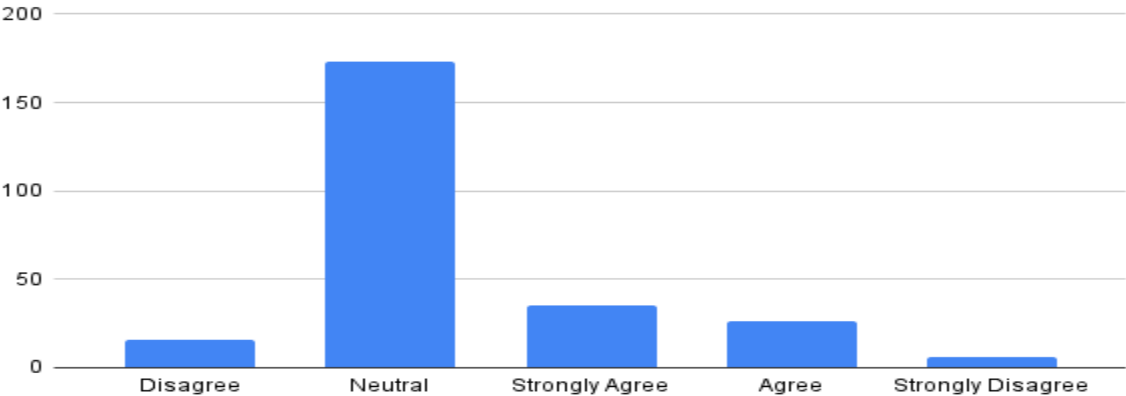


Figure 4.19: Relationship Between App Design Issues and Frequency of App Use

Source: Yakub, (2025)

Conclusion

In summary, while the overall Likert mean score of 3.59 (71.8%) reflects moderate concern with AI language apps, the primary barriers lie in external and motivational factors. Furthermore, internal design aspects such as feedback clarity and user interface were not perceived as major limitations. These findings suggest that while the AI applications themselves are functionally sound and culturally appropriate, their true effectiveness is heavily moderated by socioeconomic conditions and infrastructural availability. Addressing these broader systemic issues may be key to unlocking the full potential of AI-powered education.

CHAPTER FIVE

5.0 Summary, Conclusions, and Recommendations

This chapter provides a synthesis of the study's major findings, linking them to the research objective.

5.1 Summary of the Study

This study investigated the influence of artificial intelligence (AI) on language learning mobile applications, focusing on users' awareness, effectiveness, and challenges associated with the

usage of such technologies. The research adopted a mixed-methods approach, primarily relying on a structured questionnaire administered to a sample of 256 respondents, including language learners actively using AI-driven apps. Quantitative data were analyzed using descriptive statistics (frequencies, percentages, and mean scores) and inferential analysis (Pearson correlation), while qualitative patterns were observed to contextualize the responses.

The findings revealed a generally high level of awareness among users regarding AI features embedded in language learning applications, such as voice recognition, predictive feedback, and adaptive learning paths. Effectiveness was also positively rated by respondents, with many highlighting increased engagement, personalized learning experiences, and faster language acquisition as key benefits. However, notable challenges emerged — especially poor internet connectivity and issues related to app design which significantly impacted user satisfaction and usage frequency.

Pearson’s correlation analysis revealed moderate to strong positive relationships between the key variables:

- Awareness and Effectiveness: $r = 0.578$
- Awareness and Challenges: $r = 0.334$
- Effectiveness and Challenges: $r = 0.638$

These correlations suggest that increased awareness tends to improve perceived effectiveness, while challenges although less strongly linked but still play a moderating role in the overall learning experience.

Visual illustrations (e.g., Figures 4.16–4.19) and tabular summaries (e.g., Tables 4.7–4.10) were used to present key response distributions, such as the overwhelming agreement (89.06%) that poor internet connectivity is a major barrier and the neutral-to-mild concern (mean = 3.27) expressed about app design issues. These findings emphasize the complexity of technological adoption in language learning and the infrastructural contexts in which these apps are used.

5.2 Conclusion of the Study

The study concludes that AI-powered language learning applications hold significant promise for enhancing language acquisition through personalized, interactive, and intelligent learning systems. Users generally possess a good level of awareness regarding the AI capabilities of these tools and report moderate to high levels of effectiveness.

However, the study also highlights persistent challenges that inhibit optimal use. Chief among these are infrastructural barriers such as poor internet connectivity, which severely limits real-time interaction and engagement with AI features. While users find the tools effective when accessible, their experience is constrained by inconsistent app design and limited offline functionalities. These limitations highlight the digital divide and underline the importance of contextualizing educational technologies within the realities of their users.

The moderate correlation between awareness and challenges indicates that while users are informed, this awareness does not necessarily shield them from systemic issues. In contrast, the stronger correlation between effectiveness and challenges underscores that even highly effective tools can be hindered by technical and environmental barriers. These findings call for a multi-dimensional approach to educational technology deployment, one that integrates user training, infrastructural investment, and design optimization.

5.3 Recommendations of the Study

1. Enhance

Offline

Functionalities:

Developers should prioritize building robust offline modes to ensure continued access to AI-driven features in environments with unstable internet. Features such as offline vocabulary practice, downloadable lessons, and delayed feedback processing could bridge the digital gap.
2. Improve

App Design and User Interface:

Simplifying navigation, reducing cognitive load, and incorporating accessibility features will improve user experience. Continuous user testing and feedback loops

should inform design updates.

3. Increase Awareness Through Campaigns and Training:
Awareness is a critical driver of adoption. Educational institutions and app developers should organize awareness campaigns, webinars, and user onboarding sessions to demonstrate the capabilities and benefits of AI in language learning.
4. Invest in Internet Infrastructure for Education:
Policymakers must collaborate with tech providers to make high-speed internet more accessible and affordable, particularly for students in underserved areas. This is crucial for the real-time functionality of AI-powered applications.
5. Tailor AI Solutions to Local Contexts:
Language learning applications should be localized and culturally sensitive. This includes incorporating local languages, contexts, and relatable learning scenarios to increase relevance and motivation.

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QUESTIONNAIRE

KWARA STATE COLLEGE OF EDUCATION, ILORIN

SCHOOL OF LANGUAGE

DEPARTMENT OF ENGLISH

Students' Variable Questionnaire (SVQ)

Dear

Respondent,

I am an NCE III student of the Kwara State College of Education, Ilorin, conducting a survey as part of my research thesis titled: "The Influence of Artificial Intelligence on Language Learning Mobile Applications among College of Education Students in Kwara State, Ilorin." This questionnaire is designed to collect information on students' awareness, usage, perceived effectiveness, and challenges related to AI-powered language learning mobile applications. The data gathered will contribute to understanding how AI can support language learning and inform the design of solutions for enhancing language education in a conducive learning environment.

This survey will take approximately 10-15 minutes to complete. Your cooperation in supplying the needed information is highly required and will be used to gather information for academic research purposes, and responses will be treated with utmost confidentiality. Thank you.

Artificial Intelligence (AI) means using computers or machines to do things that normally require human thinking. In language learning apps, AI helps make learning easier, faster, and more fun by doing things like: speech recognition, reading and replying to your messages, studying how you learn and giving you lessons that match your level, Giving you quick corrections when you make mistakes, letting you chat with smart bots to practice your language skills.

Section A: Demographic Information

1. **Gender**

☐ Male ☐ Female ☐ Prefer not to say

2. **Age Range**

☐ Below 18 ☐ 18–22 ☐ 23–27 ☐ 28 and above

3. **Level of Study**

☐ NCE 1 ☐ NCE 2 ☐ NCE 3

Section B: Awareness of AI-Powered Mobile Language Learning Applications

4. Are you aware of mobile apps that use Artificial Intelligence (AI) for language learning?
☐ Very aware ☐ Aware ☐ Neutral ☐ Slightly aware ☐ Not Aware

5. Which of the following AI-powered language apps have you heard of? (*Multiple choices allowed*)
☐ Duolingo ☐ Elsa Speak ☐ Babbel ☐ Google Translate ☐ Others (Please specify): _____

6. How did you first learn about these AI language apps?
☐ Friends ☐ Lecturers ☐ Social Media ☐ App Store/Play Store ☐ I haven't heard of any

7. How familiar are you with how AI works in these language apps?
☐ Very aware ☐ Aware ☐ Neutral ☐ Slightly aware ☐ Not Aware
8. Have you ever used any AI-powered mobile application for language learning?
☐ Yes ☐ No ☐ Maybe
9. How often do you use such applications?
☐ Monthly ☐ Daily ☐ Weekly ☐ Occasionally ☐ Never

Section C: Perceived Effectiveness of AI in Language Learning

10. Do you feel more confident speaking a new language after using AI-based apps?
☐ Yes ☐ No ☐ Maybe

Effectiveness of AI Language Learning Tools

11. I find the feedback provided by AI language apps helpful for my learning
☐ Strongly agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree
12. AI language learning applications have helped me understand grammar better than traditional classroom learning
☐ Strongly agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree
13. AI language learning apps keep me motivated to learn regularly.
☐ Strongly agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree
14. AI-powered language learning apps improve my pronunciation and speaking skills.
☐ Strongly agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree
15. Which AI feature do you find most useful?
☐ Speech recognition ☐ Adaptive learning ☐ Grammar correction ☐ Chatbot conversation ☐ None

Section D: Challenges Faced in Using AI Language Learning Applications

16. Do you face technical challenges while using AI language apps (e.g., app crashing, errors)?
☐ Always ☐ Often ☐ Sometimes ☐ Rarely ☐ Never
17. Do you find it difficult to afford internet data to use these apps consistently?
☐ Yes ☐ No ☐ Maybe
18. Are the app instructions and feedback easy to understand?
☐ Always ☐ Often ☐ Sometimes ☐ Rarely ☐ Never
19. Do you think these apps are culturally relevant and relatable to your learning needs?
☐ Yes ☐ No ☐ Not Sure

20. What is your biggest challenge using AI-powered language apps?

Poor internet connection (Strongly agree) (Agree) (Neutral) (Disagree) (Strongly Disagree)

Lack of motivation (Strongly agree) (Agree) (Neutral) (Disagree) (Strongly Disagree)

App design issues (Strongly agree) (Agree) (Neutral) (Disagree) (Strongly Disagree)

AI feedback (Strongly agree) (Agree) (Neutral) (Disagree) (Strongly Disagree)