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Assessing the Impact of Artificial Intelligence Tools on Reading Proficiency among Undergraduate Students of Prince Abubakar Audu University Anyigba, Kogi State Nigeria

MUAZU, Adamu Momoh

Email: muazu.am@ksu.edu.ng

Phone: 08064536989

Department of Arts Education, Faculty of Education, Prince Abubakar Audu University, Anyigba, Kogi State, Nigeria

Abstract

Reading proficiency is a fundamental skill in higher education, yet many undergraduate students in Nigeria struggle with comprehension due to limited support and outdated instructional methods. The integration of artificial intelligence (AI) tools into education offers new possibilities for personalized and adaptive learning, but little research has examined their specific impact on reading development in Nigerian undergraduate settings. This study explores the perception and experiences of undergraduate students regarding the use of AI tools such as chatgpt, Rewordify and Read theory for enhancing students' academic reading proficiency. Using a qualitative research approach, semi-structured interviews were conducted with eighty students from diverse disciplines who had prior exposure to AI tools. The thematic analysis framework was used to identify key themes across participant responses. Emerging themes included personalized and self-paced learning, vocabulary support and comprehension, increased engagement, and provision academic confidence. However, challenges such as over reliance on AI generated content, inconsistent usage habit, and digital literacy gaps were also identified. Finding suggested that AI tools, implemented with appropriate guidance, equitable access, and curriculum alignment, can significantly enhanced students' reading confidence, comprehension, and motivation. The study contributed to the body of literature on AI in education by offering context-specific insight for technology integration in literacy instruction. It highlighted the need for inclusive, students centered strategy to promote reading proficiency in resource-constrained academic environment. Future research should explore teachers respective, long-term learning outcomes, and the integration of AI tools across diverse linguistic and institutional contexts to further validate and expand on these findings.

Key Words: Artificial Intelligence Tools, Reading Proficiency, Undergraduate, students.

Introduction

In the digital age, artificial intelligence (AI) has emerged as a transformative force in education, reshaping how students learn, engaging with content, and developing essential academic skills (Khan & Rasheed, 2023). AI-based tools, particularly those designed for English language learning, have shown substantial potential in improving reading proficiency by offering personalized, adaptive, and interactive learning experiences (Zawacki-Richter et al, 2020; Dwivedi et al, 2021). Reading proficiency is fundamental to academic success, especially for undergraduate students who are required to comprehend complex texts, analyzing information critically, and applying knowledge across disciplines. However, traditional instructional methods often lack the flexibility and individualization necessary to address students' diverse reading needs, leading to disengagement and uneven progress (Siddiqui & Abbas, 2023). Recent developments in educational AI have introduced a variety of tools- such as ChatGPT, Rewordify, and ReadTheory- that provide real-time feedback, simplifying dense academic texts, and adjusting content on the learner's level. These tools not only assist in vocabulary development and comprehension but also foster learner autonomy and motivation through gamified, interactive, and self-paced learning environments (Khosravi et al., 2022; Noor & Hussain, 2024). Moreover, in disadvantaged educational settings like those in Nigeria, such AI tools offer scalable and low-cost solutions to bridge the gap in reading achievement and instructional quality (Qazi et al., 2023; Aftab & Rehman, 2025).

Despite the growing presence of AI tools in the classrooms, there is limited empirical research works focusing on their impact, specifically on reading proficiency among undergraduate students, supported reading platforms, while others raise concerns regarding digital literacy, student over-reliance, and unequal access to technology (Chen et al., 2021; Vaidya & Kumari, 2022; Baig & Saleem, 2024). This lack of consistent findings underscores the need for more context-specific studies. This study aims to investigate the use and impact of the AI tools enhancing reading proficiency among undergraduate students, with a particular focus on effectiveness, student engagement, and associated challenges. This research focus on undergraduate students from Prince Abubakar Audu University Anyigba who are using AI tools in academic reading contexts. By exploring how practices for integrating such technologies in higher education help to



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improve academic reading outcomes. Despite the increasing use of AI tools in education, many undergraduate students struggle to achieve sufficient reading proficiency, which negatively affects their academic performance and overall comprehension skills. These challenges are primarily caused by traditional, one-size-fits-all instructional approaches that fail to address individual learning needs, offer minimal real-time support, and lack interactivity (Siddiqui & Abbas 2023). As students encounter increasingly complex academic texts, their inability to decode, interpret, and engage meaningfully with written content limits their educational potential. In Nigeria, the issue is further intensified by large class sizes, outdated materials, and limited teacher attention, which prevent personalized instruction and hinder vocabulary development (Qazi et al., 2023). These limitations leave many students disengaged, demotivated, and underprepared for higher-level reading tasks. The situation becomes more problematic in reading large volume of works, where comprehension and critical thinking are crucial for success. Consequently, the lack of effective, student-centered reading instruction remains a persistent barrier in promoting academic literacy at the undergraduate level (Aftab & Rehman, 2025).

Research Question:

This study was guided by the following research questions.

- (i) To what extent does the undergraduate students perceive and experience the use of AI tools in improving their academic reading proficiency?
- (ii) What challenges and benefits do undergraduate students encounter when using AI-based tools for enhancing reading comprehension?

Literature Review

In recent years, the integration of Artificial Intelligence (AI) into the English Language education landscape system has reshaped traditional learning processes and pedagogical strategies (Zawacki-Richet et al. 2020) Among its many applications, AI has significantly influenced language acquisition and reading proficiency development (Chen et al, 2021). Reading proficiency, which is a foundational academic skill, is vital for undergraduate students to comprehend complex texts, analyze content critically, and perform successfully across disciplines (Dwivedi et al., 2021). However, despite its importance, many student particularly in developing countries struggle with reading comprehension, vocabulary acquisition, and engagement (Siddiqui & Abbas, 2023). AI tools, such as chatgpt, Rewordify, and Read Theory are emerging as potential solutions to these challenges, offering personalized and interactive learning experiences (Khan & Rasheed, 2023; Noor & Husain, 2024). This literature reviews examines existing research on the impact of AI tools on reading proficiency, focusing on theoretical foundations, key themes, methodologies, knowledge gaps, and recent development in the field. This study is anchored to Vygotsky's (1978) Sociocultural Theory of learning, which emphasizes the critical role of social interaction and cultural tools in cognitive development. Central to this theory is the concept of the Zone of Proximal Development (ZDP) the gap between what a learner can do independently and what they can achieve with guidance and support. AI-based reading tools, such as chatgpt, Rewordify, and Read theory, act as digital scaffolds by providing real-time feedback, simplifying complex texts, and adjusting content difficulty based on learner needs (Khosrav et al., 2022). These simulate the role of a more knowledgeable other, enabling students to progress through their ZDP with guided assistance. In this way sociocultural theory provides a robust framework for understanding how AI technologies can enhance reading proficiency by supporting interaction, personalization, and mediated learning in academic environments. Several recurring themes emerges from the literature on AI tools and proficiency:

AI applications tailor reading materials to match individual learner levels, ensuring content is neither too easy nor overly challenging (Khosravi et al., 2022). Platform such as read theory provide instant corrective feedback, providing metacognitive skills and self-regulation (Noor& Hussaini, 2024). Tools like Rewordify enhance lexical understanding by simplifying difficult words and offering definitions in context (Baig & Saleem, 2024). Gamified features and adaptive challenges help sustain student interest and motivation (Qazi et al., 2023). AI tools can support students with diverse learning needs, including those from disadvantaged environment (Aftab & Rehman, 2025). A review of empirical studies revealed a variety of research designs used to investigate AI's role in reading proficiency. Most studies employ mixed-method or quasi-experimental approaches to evaluate learning outcomes. For instance, Dwivedi et al. (2021) used pre and post-test comparisons to measure improvements in reading comprehension after the use of AI tools. Others, such as Khan and Rasheed (2023), employed surveys and interviews to explore student's perceptions of AI-assisted reading platforms. Baig and Saleem (2024) combined performance analytics with qualitative feedback to analyze learner outcomes. Despite



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these efforts, there is a noticeable lack of longitudinal studies, particularly in non-western contexts. Additionally many studies rely heavily on self-reported data, which may limit objectivity and generalizability. Despite a growing body of work on AI in education, several gaps exist.

The Role of the teacher in the Integration of AI in Reading Comprehension

Most literature focuses on student outcomes, with minimal attention to teachers' roles in the integration AI into reading instruction (Vaidya & Kumari 2022). Recent advancements in AI, particularly generative AI and natural languages processing (NLP), have further expanded the capabilities of educational technologies (Zawacki-Richter et al., 2020). Tools like CHATGPT now provide dynamic conversational support allowing user to ask clarifying questions, summarize texts, and practice reading comprehension interactively (Khan & Rasheed, 2023; Noor & Hussein, 2024). Moreover, adaptive reading systems has become more sophisticated in analyzing student responses and tailoring content accordingly (Baig & Saleem, 2024). In developing countries, mobile-friendly AI platforms are increasingly being used to reach underprivileged learners, thus democratizing access to quality reading support (Quazi et al 2023; Aftab & Rehman, 2025). The existing literature provides promising evidence for the potential of AI tools in enhancing reading proficiency. Personalized feedback, adaptive content, and engaging formats appear to benefit learners across diverse contexts. However, the literature also reflects tendency to overemphasize the capabilities of technology while underestimating the importance of pedagogical integration and human oversight (Vadiya & Kumari, 2022). Several studies lack theoretical grounding, and there is a need for more robust, comparative research that considers cultural, institutional, and infrastructural variables (Chen et al., 2021). Furthermore, ethical considerations, such as data privacy and equitable access, are seldom addressed (Zawacki-Richter et al., 2020). Therefore, while AI tools offer substantial promise, their implementation must be guided by sound educational principles and contextual realities. Tools represent a transformative development in the quest to enhance reading proficiency among the undergraduate students. By offering personalized, interactive, and scalable learning environments, these technologies address many of the shortcomings of traditional reading instruction (Khosravi et al., 2022; Noor & Hussain, 2024). However, the literature also reveals significant limitations in current research, including a lack of contextual focus, insufficient longitudinal data, and under representation of teacher perspective (Baig & Saleem, 2024). Future studies should aim to bridge these gaps by adopting comprehensive, theory-informed, and context-specific methodologies. Ultimately, integrating AI tools into reading instruction should not replace human educators but rather empower them to deliver more effective, inclusive, and student-centered learning experiences (Aftab & Rehman, 2025).

Research Methods

This study adopted a qualitative research approach to investigate how undergraduate student of Prince Abubakar Audu University Anyigba, Kogi State, Nigeria can see and experience the use of Artificial Intelligence (AI) tools in enhancing their reading proficiency. A qualitative research design was chosen because it allows for an in-depth exploration of students' real-life interactions with AI platforms, capturing nuanced insights into their learning behaviors, attitudes, and challenges (Baig & Saleem 2024). The participant were selected through purposive sampling, targeting students who had prior exposure to AI tools such as CHATGPT, Read theory, or Rewordify in their academic reading activities. A total of eighty (80) undergraduate students from Prince Abubakar Audu University Anyigba from eight faculties were included in the study, representing diverse academic disciplines and reading proficiency level. Data were collected using semi-structure interviews, which enabled participants express their experience freely while ensuring that core research questions were addressed. Interviews were conducted either face to face or via voice note, depending on participants' availability and preferences. Each interview lasted approximately 20-30 minutes and was conducted in English language, based on the participants' comfort level. All interviews were audio- recorded with consent, then transcribe and translated were necessary. The data were analyzed using thematic analysis following wrong and Braun Clarke's (2006) six –phase framework. This method allowed for the identification of recurring patterns and themes related to students' perception, benefits, challenges, and overall experience with AI tools. Ethical Protocols were strictly followed throughout the study. Participant were informed of the research objectives, and informed consents were obtained prior to participation. Anonymity and confidentiality were maintained and participation were voluntary. The collected data were used solely for academic purposes and stored securely. This methodology enabled rich, contextual understanding of how AI technologies are influencing reading development among undergraduate students in a developing country context, contributing valuable insights for future educational integration.



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Presentation of Results

The results showed the important of research and explored how undergraduate students of Prince Abubakar Audu University Anyigba perceive and experience the use of AI tools to enhance their reading proficiency. Data were collected through semi-structured interviews with students who had experience in using AI tools such as CHATGPT, Read Theory, and Rewordify. Thematic analysis was employed to identify patterns in students' perceptions experiences, and challenges. Many students reported that AI tools provided are more personalized learning experience compared to traditional methods. Tools like Read theory and ChatGPT adjusted the difficulty level of reading passages according to the learner's performance, which helped in targeting individual learning needs. This adaptive approach allowed students to progress at their own pace, revisit difficult sections, and manage learning time more efficiently. However, a few participants acknowledged that the effectiveness of self-paced learning heavily depends on the learner's self-discipline and motivation. Some admitted to delaying tasks, skipping activities, or not following through with lessons regularly, which reduced their ability to benefit fully from AI tools. Students widely appreciated the vocabulary support and real-time explanations provided by AI tools. They found it easier to understand academic texts, especially when unfamiliar words were automatically simplified or defined. This in turn, enhanced their fluency and overall comprehension.

Nevertheless, some students expressed concern that such simplification could create a dependency. They noted that while AI tools helped in the short term, sometimes limited opportunities to develop strategies for tackling complex vocabulary independently, skills essential for academic success in higher education. The interactive features, instant feedback, and gamified progress indicators of AI reading tools were highlighted as motivating factors. Students found reading tasks more enjoyable and felt a sense of achievement when they reached milestones or improved scores. The digital format also helped reduce reading anxiety for some students. Despite this, a few participants shared that the initial excitement wore off over time, especially without external accountability or peer comparison. The absence of teacher interaction and face-to-face encouragement made it harder for some to remain consistently engaged with the AI tools.

Q2: What benefits and challenges do undergraduate students encounter when using AI-based tools for enhancing reading comprehension?

Students with stable internet access and familiarity with technology found AI tools accessible and effective. They appreciated being able to use them on mobile phones or laptops, anytime and anywhere, which was particularly helpful during off-campus study sessions. However, participants from network disadvantages homes or rural backgrounds faced significant barriers, including slow internet outdated devices, and limited digital skills. These issues not only disrupted learning but also created disparities in how effectively different students could benefit from AI based reading support. Many students described AI tools as helpful aids for clarifying texts, building confidence and developing consistent reading habits. The tools allowed them to get instant explanations and summaries, which saved time and supported understanding. Many students described AI tools as helpful aids for clarifying texts, building confidence and developing consistent reading habits. The tools allowed them to get instant explanations and summaries, which saved time and supported understanding.

On the downside, some students admitted to become overly dependent on AI-generated answers, summaries, or paraphrasing tools. This dependency sometimes discouraged them from analyzing content critically or attempting to understand difficult passages on their own, which could affect their long-term reading independence. The majority of the students indicated that regular use of AI tools improved their confidence in reading and complex academic texts. They felt better prepared for exams, assignments, and class discussions, especially after practicing with AI-generated quizzes or explanations. However, this confidence was not consistent across all users. Students who used the tools irregularly or without proper guidance found that their preparation was sometimes inadequate. Moreover, some pointed out that the content provided by AI tools didn't always align with their course syllabus, leading to gaps in understanding during formal assessments.

Discussion of Findings

The findings of this research revealed that the use of AI tools in academic settings not only introduced a new way of learning for students but also represented a shift in how educational support is delivered outside traditional classroom boundaries. Students in this study expressed that AI tools such as ChatGPT, Read Theory, and Rewordify significantly



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contributed to the development of their reading proficiency by offering personalized learning paths and instant support. These tools helped learners build confidence and fluency, especially when engaging with complex academic texts. The availability of simplified explanations and adaptive reading content allowed students to study at their own pace, which contributed to greater comprehension and vocabulary enhancement. Furthermore, students reported that features such as gamification, real time feedback, and interactive tasks made reading more engaging and enjoyable. This aligned with the work of Khan and Rasheed (2023), who found that AI-supported learning platforms improved learner engagement and motivation through adaptive and user-friendly interfaces. The findings also reflect the principle of Vygotsky's Sociocultural Theory, (1978) where AI tools acted as digital scaffolds, supporting students within their Zone of Proximal Development and encouraging independent learning. However, the study also uncovered multiple challenges. Some students struggled with maintaining consistent usage due to limited self-discipline, time management issues, or a lack of accountability. These issues are similar to those raised by Chen et al. (2021), who discussed how over-reliance on AI can hinder student's critical thinking and reduce their ability to read independently without digital assistance. Additionally, students from under privilege backgrounds faced significant barriers, including limited internet access, outdated devices, and low digital literacy, which created inequality in learning outcomes. These obstacles align with Baig and Saleem (2024), who highlighted that digital divides can impact the effective use of AI technologies in education, particularly in rural and low-incomes regions. In a nutshell, the results suggested that when AI tools are integrated with proper institutional support such as digital training, access to reliable internet, and alignment with curriculum objectives they can play a transformative role in improving students' academic reading proficiency. The tools not only support comprehension and vocabulary development but also promote learner autonomy and motivation. Therefore, a balanced and inclusive implementation of AI-based learning tools has the potential to bridge instructional gaps and enhance academic literacy, especially in developing country context like Nigeria in general and in Prince Abubakar Audu University, Anyigba, Kogi State in particular.

Conclusion

In conclusion, AI tools have the potential to enhance academic reading proficiency when used thoughtfully and consistently. To maximize their impact, educational institutions must ensure equitable access, provide training for both students and instructors, and align AI tools with curriculum goals. Future research should focus on long-term outcomes, teacher perspectives, and strategies for integrating AI into border literacy instruction. By addressing these dimensions, AI can become a valuable complement to traditional teaching methods, fostering more inclusive and effective learning environments.

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