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Impact of Artificial Intelligence (AI) Tools on English Language Learning: A Study of Students of the National Open University of Nigeria (NOUN), Abakaliki Study Centre, Ebonyi State

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Abstract

Artificial Intelligence (AI) has progressively altered global language teaching and learning experience, offering personalized instruction, cognizant, learner-centered feedback and adaptive instructional assistance. However, there is a dearth of empirical evidence on these multidimensional functions of artificial intelligence within open and distance learning institutions in Nigeria. This study investigated the effects of artificial intelligent (AI) tools on English language learning among students of National Open University of Nigeria(NOUL), Abakaliki Study centre, Ebonyi State. This study employed a cross-sectional survey design with a purposive sample of 150 students selected from a population of 410. A structured questionnaire was used to collect data and analyze them using frequencies, percentages, and mean scores. The results indicated that the students were aware of the development of AI tools, had positive attitudes toward their use, were willing to adopt them for English learning and recognized their contribution to enhancing writing, reading, speaking and overall learning significantly. The findings of this study also revealed that despite their benefits, weak internet connectivity, high data costs, low digital skills and a lack of institutional support constrained the effective use of such technologies. The study, therefore, concluded that AI has enormous potential to enhance English language learning in open and distance education, while recommending that standard digital infrastructure, institutional policies, and literacy initiatives should be provided by relevant authorities, institutions and agencies.

Keywords: Artificial Intelligence, English Language Learning, National Open University of Nigeria, Open and Distance Learning, Students' Awareness

INTRODUCTION

Artificial Intelligence (AI) has become one of the great technological innovations that are instrumental in shaping modern education. Artificial Intelligence (AI) , which was coined in 1956 by John McCarthy, refers to computer systems that can perform tasks that normally require humans, including learning, reasoning and problem-solving (Kumar, 2023). Recent developments in AI have revolutionized the landscape of teaching and learning through intelligent tutors, adaptive learning platforms, and automated feedback mechanisms that enable personalized learning experiences (Luckin et al., 2016; Holmes et al., 2019). It allows learners to consume educational content more effectively as well as enabling instructors to deliver timely and personalized assistance. Thus, AI has become a critical part of educational innovation across institutions around the globe.

The significant rise in the utilization of AI in relation to English language education can be attributed primarily to the various roles that English plays as a global lingua franca for communication, education, business, diplomacy, and scientific research. Similarly, English is the de facto official language in Nigeria and dominates all levels of formal education, leaving proficiency a necessity for academic success and socio-economic advancement (Bamgbose, 1990; Adegbija, 2004). Because of these new capabilities, practical applications like ChatGPT, Grammarly, Duolingo, Google Translator and Quillbot all leverage AI to optimize learning opportunities for users across a variety of subject matter by providing tailored feedback and improved writing, pronunciation, vocabulary grammar and conversational skills (Fitria 2023; Yan 2023). These tools motivate individual learning and support classroom instruction that is not often supported by standard language teaching techniques. As they become more accessible, AI-assisted language learning has emerged as a key feature of modern education.

AI-powered learning tools become more significant especially in open and distance learning institutions because technology is the sole mode of teaching and learning. The reliance on digital platforms for instructional delivery, student support services, assessment and communication by the National Open University of Nigeria (NOUN) has created an enabling environment which calls for embracing emerging educational technologies (Jegede, 2010). Review of previous studies suggested that well-designed integration of AI applications into teaching practice enhance students' engagement, writing, language ability and academic performance (Lu, 2018; Tafazoli et al., 2019). Successful acceptance, nonetheless, entirely relies on learners' digital literacy, institutional support, internet accessibility and technological structure. The role AI plays in supporting English learning using technology-mediated educational contexts relies on these factors.

Though research has shown an increase in the popularity of AI applications among university students, empirical evidence on their impact on learning by Nigerian open and distance learning institutions remains unexplored. Students often find what they perceive to be easier on AI software: writing assignments, grammar correction, and vocabulary building or even access to translation and information — but it is still a gray area as to whether this improves English language learner's experience or simply feeds into dependency on an automated system. Moreover, the availability of technologies in countries such as Nigeria, and Ebonyi State in particular, is also limited by poor digital infrastructure, intermittent access to the internet and expensive data charges as well as minimal institutional support and heterogeneous levels of digital literacy influencing students' optimal use of AI tools for language learning (Afolabi, 2022; Ogunyemi & Adeyemi, 2023). The evident gap in knowledge is more pronounced among students of National Open University of Nigeria, Abakaliki Study Centre where learning through technology serves as a cornerstone of most academic engagements.

This study adds to the body of research on Artificial Intelligence in language education, and presents

empirical data from an open and distance learning institution in Nigeria, where studies of AI-assisted English language learning has been limited. The results are important to contribute to the theoretical background of students' knowledge, feelings, preparedness and experiences with AI technologies while offering practical evidence to educators, curriculum designers, institutional leaders and policy makers. Amongst other things, it also provides some practical suggestions for enhancing integration of AI into English Language teaching in technology mediated- learning contexts. It contributes to the dialogue surrounding the use of Artificial Intelligence in higher education and English language learning—a subject matter that has seen an increasing amount of attention being paid to it lately.

Research Aim , Objectives and Questions

Against this background, this study aims to examine the impact of Artificial Intelligence tools on English language learning among students of the National Open University of Nigeria, Abakaliki Study Centre, Ebonyi State. Specifically, the study realizes the following objectives:

a. determine the level of awareness of AI tools among students of NOUN, Abakaliki Study Centre;
b. examine students' perceptions of AI tools for English language learning;
c. assess the extent to which students are ready to adopt AI tools for English language learning;
d. examine the perceived impact of AI tools on English language learning; and
e. identify the challenges affecting the use of AI tools for English language learning.

The study is guided by the above specific objectives, which are addressed by the corresponding research questions stated below.

a. What is the level of awareness of AI tools among NOUN students?
b. What are students' perceptions of AI tools for English language learning?
c. To what extent are students ready to adopt AI tools for English language learning?
d. What is the perceived impact of AI tools on English language learning?
e. What challenges affect the use of AI tools for English language learning?

LITERATURE REVIEW

Conceptual Review

Artificial Intelligence in Education

Artificial intelligence (AI) has emerged as one of the transformative innovations in education that helps with personalized learning, intelligent tutoring, automated grading and adaptive delivery of instruction. Xuetal.(2024),intheirstudyLargeLanguageModelsforEducation:ASurvey report that AI has changed both teaching and learning with faster ways to learn, offering personalised instruction by matching students' needs with recommended resources and supporting access to educational resources. However, they also find unresolved questions around ethics, policy and implementation in many low- and middle-income countries. Karataş et al. (2024) studied the impact of ChatGPT in a foreign language learning context and the results showed that AI could increase learner engagement, foster independent study, and provide real-time academic support, however their study consisted of a small sample of Turkish university students. This study contributes to this discourse by examining AI in the unique educational context of English language learning among open and distance students at the National Open University of Nigeria where open and distance learning creates its own technologically and pedagogically unique environments.

AI Tools for English Language Learning

AI-powered tools have brought immense changes in English language teaching because now learners can practice and improve grammar, vocabulary, pronunciation, reading, writing and speaking skills through

personalized opportunities. Lo et al. (2024) conducted a systematic review of 70 empirical studies on the integration of ChatGPT in ESL/EFL settings and found that while AI applications impact learner autonomy, afford tailored feedback, and assist teachers in teaching support language education, concerns about academic integrity and misinformation from references remain an issue. Likewise, Balcı (2024) conducted a systematic review in terms of the use of ChatGPT in English as a Foreign Language (EFL) education and found that AI contributes to language competence, motivation, and classroom engagement and suggested conducting more studies beyond certain educational settings to generalize further. The foregoing observations justify the current investigation to ascertain if similar benefits are realisable among students in a Nigerian open and distance learning institute.

Students' Awareness and Readiness for AI Adoption

Awareness and readiness to assimilate and master AI tools are of utmost importance to the successful integration of Artificial Intelligence into educational practice by students. Ghimire et al. (2024), investigating educator awareness and perception of generative AI, reported that while considerable increases in awareness and positive attitudes towards AI have occurred since 2022, self-efficacy for effective use of generative AI differs by discipline and institutional context. Similarly, in a survey among the students using large language models for education, Sublime and Renna (2024) described pervasive awareness and frequent use of AI tools but cautioned that most learners rarely evaluate information from AI tools critically therefore risking overdependence with declining analytical skills. Although these studies offer important perspectives on AI in general, none specifically examine the awareness of and readiness for AI among English language learners in Nigerian distance education, which is the gap filled by this study.

Theoretical Framework

The foundation for this study is Vygotsky's Sociocultural Theory of Learning. Vygotsky(1978) posits that learners ultimately learn better from a More Knowledgeable Other (MKO) in the Zone of Proximal Development (ZPD) because it provides them with support to do things they could not otherwise do independently. While the theory is in fact older than Artificial Intelligence itself, modern researchers have shown that AI-based learning tools serve as digital scaffolds by offering timely feedback, personalized instructions and interactive experiences. .Loetal.(2024), equally demonstrated that AI applications like ChatGPT assist in personalized language learning with adaptive responses that scaffold vocabulary, writing, and critical thinking skills thereby aligning with Vygotsky's fundamental principles.

The applicability of Vygotskys theory to Artificial Intelligence has been the subject of more and more scholarly interest in recent years. Karataş et al. (2024) discovered that AI supported language learning has the potential to promote learner engagement, peer-to-peer collaboration and autonomous learning, and still provide the scaffolding presence necessary for successful second language acquisition. Their research also demonstrated that AI allows students to get academic support outside the classroom, which expands opportunities for impactful learning interactions. Yet, they proposed for more empirical research in various educational settings as the impact of AI-facilitated learning may vary across context with respect to infrastructure and digital competence.

Vygotsky's Sociocultural Theory is therefore suitable for this study as it provides an excellent theory to explain how AI tools assist language learning among students of the National Open University of Nigeria. ChatGPT, Grammarly or Duolingo, the above AI applications serve as virtual learning buddies offering corrective feedback, reminders and tailored support, lending a hand to help learners receive constructive assistance with building their language proficiency. This theory also supports the impact of mediated interactions on effective learning and enhances understanding among those students who are dependent on

complete digital online platforms for their academic activities in open and distance education. Thus, the Sociocultural Theory of Vygotsky provides a very solid theory with which to investigate the awareness, use and perceived impact of AI tools on English language learning among NOUN students.

Empirical Review

International studies performed in recent years have revealed how much AI has positively impacted English language teaching and learning on various fronts. ChatGPT useIn their systematic review of 21 studies related to ChatGPT in English as a Foreign Language (EFL) education, Balcı (2024) found that while AI aided learners in writing, reading, speaking, grammar and vocabulary mainly positive effects from EFL instructors on students' motivation were expressed there are still concerns regarding ethics and overdependence. This was also echoed in a systematic review of 70 empirical studies on ChatGPT in ESL/EFL education by Loetal. 2024), which concluded that while AI promoted personalized learning and enhanced learner autonomy and teacher support, further studies are needed to validate the findings across diverse educational contexts.

AI in education in Nigeria is rapidly growing but it is yet at an emerging stage. Chukwuere (2024), after reviewing ChatGPT in higher education, found artificial intelligence to support personalizing instruction, enhancing the learning experience, and supporting student engagement; however he offered suggestions for limiting over-reliance on ChatGPT and highlighted ethical considerations in academia. Furthermore, Adelani et al. (2024), when researching multilingualism and generative AI in Nigeria saw inadequate representation of Nigerian linguistic realities within AI systems, concluded that the application of AI requires more meaningful contextualization to serve a functional purpose in Nigerian education.

While these international and Nigerian studies present much-needed data of the learning opportunities that can prevail with Artificial Intelligence, most have drawn little focus to English Language learning in open and distance education institutions. Most studies also focused on traditional universities or foreign language classrooms and affluent educational contexts, without specifically focusing on the learners of the National Open University of Nigeria. Thus, little empirical data exists on students' cognizance of AI-assisted English language learning in the NOUN system; what students existing knowledge about AI is, how prepared they are to sit for an exam assisted by an AI supported understanding, and more importantly, whether they believe that it would help with their learning nor if there would be challenges associated with it.

Therefore, the current study adds to the literature by showcasing qualitative evidence from Nigeria through case studies at the National Open University of Nigeria, Abakaliki Study Centre, Ebonyi State. Previous studies have mostly focused on general AI adoption while this study investigates students' awareness, perception, readiness and effect of AI tools in learning English language in an open and distant learning environment. This study aims to add to the ongoing discussion on AI in language learning and provide evidence for educators, policymakers and institutions who are looking towards Artificial Intelligence as an avenue for effective English language teaching-learning process in Nigeria.

Gap in the Existing Literature

Karataş et al. (2024), Lo et al. (2024), Balci (2024) and Xu et al. (2024) carefully studied Artificial Intelligence's applicability to learning and found that it increases the learner engagement through asynchronous learning, personalized instructions, language proficiency improvement. Yet, these studies were completed outside of Nigeria and primarily addressed general higher education or English as a Foreign Language (EFL) contexts, thus limiting their applicability to the open and distance learning context in Nigeria. Similarly, Chukwuere (2024) investigated the educational benefits and drawbacks of

ChatGPT in higher education but was not approached regarding issues relating to English language learning or unique experiences of students enrolled at National Open University of Nigeria.

There is, therefore, a considerable gap in empirical knowledge about students' awareness, preparedness and perception of AI tools and their real influence on English language learning among undergraduates from open and distance learning institutions in Nigeria. Mindful of the above gap, the present study addresses this by restricting participation to students of the National Open University of Nigeria, Abakaliki Study Centre Ebonyi State where technology-mediated learning is largely the dominant mode of instruction. This study identifies contextualised evidence, based on students' awareness, perception, readiness as well as perceived impact and challenges regarding the use of AI in English learning and teaching that complements international findings and contributes to the increasing amount of literature on Artificial Intelligence in language education.

METHODOLOGY

The study employed the descriptive survey research design to investigate the influence of Artificial Intelligence (AI) tools on English learning among students of National Open University of Nigeria (NOUN), Abakaliki Study Centre Ebonyi State. This design was deemed suitable as it allowed for quantitative data collection on students' awareness of, perceptions towards and readiness to use AI tools in English language learning and experiences with these tools in their real academic setting.

The study was carried out at National Open University of Nigeria Abakaliki Study Centre Ebonyi State. The sample were 410 undergraduate students taught English and English-related courses at the Centre. The study employed a purposive sampling method to target experienced respondents who used AI-assisted learning tools as they have the relevant knowledge necessary to answer the research objectives, which in total amounted to 150.

Data were collected using a researcher-developed structured questionnaire titled **Artificial Intelligence and English Language Learning Questionnaire (AIELLQ).** The instrument measured students' awareness, perceptions, readiness, perceived impact, and challenges associated with AI-assisted English language learning using a four-point Likert scale. Face and content validity were established by experts in Language Education and Educational Measurement and Evaluation, while a pilot study produced a Cronbach's Alpha reliability coefficient of 0.78, indicating satisfactory internal consistency.

The questionnaire was applied using both paper and online version with the help of three trained research assistants, all completed copies were collected for analysis. Data were analyzed statistically for descriptive statistics using frequencies, percentages, mean scores and grand mean and 2.50 was set to be used as the cut-off point for decision-making. This method allows researchers to respond on each construct and manage the level of agreement of respondents.

The study was conducted in alignment with ethical guidelines for educational research. All participation was voluntary and before commencing data collection, informed consent for participation in this study was obtained from all respondents. Participants were guaranteed anonymity and confidentiality, with the information they provided used solely for research purposes. They could withdraw from the study at any point without being adversely impacted by this decision.

Analysis of Results

The findings are presented according to the research questions that guided the study.

Research Question One: What is the level of awareness of AI tools among NOUN students?

Awareness Level	Frequency	Percentage (%)
Aware	105	70.0
Not Aware	45	30.0
Total	150	100.0

The findings indicate that 70% of the respondents were aware of Artificial Intelligence tools, while 30% reported limited or no awareness. This suggests a relatively high level of awareness of AI technologies among students of the National Open University of Nigeria, Abakaliki Study Centre.

Research Question Two: What are students' perceptions of AI tools for English language learning?

Statement	Mean	Decision
AI tools are useful for learning English	3.20	Agree
AI tools are easy to use	3.05	Agree
AI tools improve learning experiences	3.10	Agree
Grand Mean	3.12	Agree

The grand mean of 3.12 indicates that respondents held positive perceptions regarding the use of AI tools in English language learning. Students generally agreed that AI applications are useful, easy to use, and capable of improving their overall learning experiences.

Research Question Three: To what extent are students ready to adopt AI tools for English language learning?

Statement	Mean	Decision
Willingness to use AI tools	3.00	Agree
Access to AI tools	2.80	Agree
Possession of required digital skills	2.75	Agree
Grand Mean	2.85	Agree

The findings reveal a positive level of readiness among respondents to adopt AI tools for English language learning. Although students expressed willingness to use AI technologies, comparatively lower ratings for access and digital skills suggest that readiness could be strengthened through improved technological support and digital literacy.

Research Question Four: What is the perceived impact of AI tools on English language learning?

Statement	Mean	Decision
Improves writing skills	3.25	Agree
Improves reading comprehension	3.10	Agree
Improves speaking skills	2.95	Agree
Enhances overall learning	3.30	Agree
Grand Mean	3.15	Agree

The results indicate that respondents perceived AI tools as having a positive impact on English language learning. The highest rating was recorded for enhancing overall learning (M = 3.30), while improvements in writing, reading, and speaking skills also received positive evaluations.

Research Question Five: What challenges affect the use of AI tools for English language learning?

Statement	Mean	Decision
Poor internet connectivity	3.18	Agree
Inadequate digital skills	2.91	Agree
High cost of internet data	3.26	Agree
Limited awareness of available AI tools	3.04	Agree
Inadequate institutional support	2.88	Agree
Grand Mean	3.05	Agree

The findings show that respondents identified several barriers to the effective use of AI tools in English language learning. The most significant challenges were the high cost of internet data and poor internet connectivity, while inadequate digital skills, limited awareness of available AI applications, and insufficient institutional support were also identified as important constraints.

Discussion of Findings

First and foremost, the results of this research demonstrate that students from National Open University of Nigeria, Abakaliki Study Centre have a good level of awareness of Artificial Intelligence (AI) tools in learning English language. This is consistent with the studies of Ghimire et al. (2024) and Lo et al. (2024) which asserted that the rapid proliferation of digital learning platforms tied to access to generative AI applications has raised awareness of these technologies among higher education students. The level of awareness that was found in the current study was slightly higher than what has been demonstrated for national universities such as NOUN, where students primarily rely on technology in their academic pursuits. This implies that in open and distance learning environments, learners are exposed to emerging digital technologies, which also indicates an increasing familiarity with AI-assisted learning applications.

Secondly, it was discovered within the study that participants had favorable attitudes towards utilizing AI instruments in English language studying. This result is in agreement with the study of Karataş et al. (2024), which discovered that AI applications boost learners' motivation, classroom engagement, and language practice experiences. Furthermore, Balcı's (2024) systematic review of AI applications has found out that AI improves students' learning in English writing & grammar, vocabulary and English Language proficiency. The positive impression noted in this research can be attributed to the immediate provision of feedback and personalized learning support that AI tools such as ChatGPT, Grammarly, Duolingo are capable of offering learners along with limitless access to educational resources. These results strongly suggest that students perceive AI, generally, as an additional learning tool, rather than a substitute for traditional education.

Thirdly, the study found that the respondents were willing to adopt AI tools even with recognition of infrastructure and technological challenges. Although students were keen to apply AI for English language learning, new media technologies could not be effectively exploited due to poor Internet access and high data cost, lack of institutional support, as well as disparities in digital competence. This correlates with (Chukwuere, 2024) that students are open to using AI technology but may find it challenging owing to technological, ethical, and institutionally-related limitations. This means that improving digital infrastructure and strengthening institutional support systems would be of tremendous benefit to the integration of AI driven technology in English language learning in Nigerian tertiary education.

Fourthly, the results of this study also provide further empirical support for the Sociocultural Theory by Vygotsky which served as the theoretical framework in this research. According to Vygotsky (1978), learning is more easily achieved when learners are guided and scaffolded by a More Knowledgeable Other in the Zone of Proximal Development. The benefits of AI tools seen in this study indicate that such applications as ChatGPT, Grammarly and other intelligent learning systems serve as virtual learning companions by offering explanations, corrective feedback, and personalized assistance to aid language development. Hence, AI expands knowledge beyond the traditional classroom environment and fosters autonomous learning while incorporating the supportive instructional processes underpinning Vygotsky's theory.

Finally, the results of this research have important, strategic implications for open and distance learning in Nigeria. This study cites AI technologies with significant potential to enhance both English language teaching and learning within technology-mediated institutions such as the National Open University of Nigeria, given their positive awareness, perception, preparedness,and perceived influence. Nevertheless, to realize this potential, investments in digital infrastructure including the provision of low-cost internet services must continue alongside institutional AI policies, continuous digital education for students and teachers alike. Tackling these challenges will ultimately lead to a more responsible incorporation of Artificial Intelligence in the teaching and learning of English Language as well improve the quality of Nigeria's open and distance education learning outcomes.

CONCLUSION AND RECOMMENDATIONS

The study examined the impact of Artificial Intelligence (AI) tools on English language learning among students of the National Open University of Nigeria, Abakaliki Study Centre, Ebonyi State.6. Conclusion and Recommendations. The results indicated that students showed a high exposure to AI tools, positive attitudes toward the use of these tools, readiness to adopt them for English language learning and acknowledged their crucial role in helping enhance language skills despite infrastructural and institutional barriers. Such results underscore the study's primary thesis: that Artificial Intelligence could substantially enhance English language learning in open and distance education, so long as suitable digital infrastructure

is in place and institutional commitment to its use is readily available. The current study was limited to one NOUN Study Centre and utilized a quantitative survey design, indicating that there is scope for further studies amongst other study centres with mixed method research designs in order to generalize the results.

Given the thesis and conclusion of this study, it therefore offers the following pragmatic recommendations: Firstly, English language teachers are urged to purposely use AI-driven learning applications in teaching and learning activities to enhance both the learners' language ability and critical thinking skills alongside autonomous learning. Secondly, the management of National Open University and other similar institutions should begin to develop holistic approaches towards creating policies which promote responsible, ethical and effective use of Artificial Intelligence in teaching, learning and assessment. Thirdly, the government and other relevant higher educational players need to invest in consistent digital infrastructure supply, affordable internet access, and continued digital literacy programmes within their education systems which will support the successful implementation of AI technologies into educational systems. Lastly, future researchers should conduct this study in other universities and open and distance learning institutions with bigger samples and using mix-method design to produce adequate evidence on the long-term effects of Artificial Intelligence on English language learning in Nigeria.

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