



Benefits and challenges of integrating artificial intelligence in the teaching of english communication skills among lecturers in polytechnics in Bauchi State

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Abstract

The increasing adoption of Artificial Intelligence (AI) in education has transformed pedagogical practices globally; however, in many developing contexts, including Nigeria, its integration into English language teaching remains limited and underexplored, particularly at the polytechnic level. Thus, this study examines the awareness, exposure, perceived benefits, and implementation challenges of AI in the teaching of English communication skills among English language lecturers in polytechnics in Bauchi State. The study adopted a qualitative research design, and ten lecturers were purposively selected from two polytechnics. Data were collected through semi-structured interviews. The findings reveal that lecturers possess a moderate level of awareness of AI tools, with varying degrees of exposure to their use in pedagogical contexts. The findings also show potentials of AI to enhance teaching effectiveness, improve student engagement, and reduce instructional workload. The study further finds that the adoption of AI in English language instruction is constrained by several interrelated challenges. These include inadequate technological infrastructure, insufficient training and professional development opportunities, unreliable internet connectivity, and concerns about overdependence on automated systems in language teaching. The study concludes that although AI presents significant opportunities for improving the teaching and learning of English communication skills, its pedagogical value can only be fully realised through targeted institutional support, sustained capacity building for lecturers, and the development of enabling policy frameworks that address existing infrastructural and professional gaps.

Keywords: Artificial intelligence, english communication skills, polytechnic lecturers, technology integration, ESL

Introduction

The role of English as a medium of communication in Nigeria emphasises its centrality in education, governance, and socio-economic development (Muhammad *et al.*, 2018) ^[8]. As the official language and a key instrument for academic and professional interaction, proficiency in English communication skills is essential for students in tertiary institutions, particularly in polytechnics where practical and vocational competencies are emphasised. However, despite its importance, the teaching of English communication skills continues to face persistent challenges, including learner diversity, inadequate instructional resources, limited feedback mechanisms, and evolving pedagogical demands in a rapidly digitalizing world (Bilewumo, Ogidan, Adeyemo, & Saba, L. 2025) ^[2]. In response to these challenges, recent technological advancements, especially in Artificial Intelligence (AI), have introduced innovative approaches to language teaching and learning. AI-powered tools such as automated writing assistants, adaptive learning platforms, and intelligent tutoring systems have been widely recognized for their potential to enhance English language instruction through personalized learning, real-time feedback, and interactive engagement (Dugošija, 2024) ^[4]. These tools enable lecturers to design dynamic lesson content while supporting students in improving their grammar, vocabulary, and overall communicative competence.

Previous studies have made significant contributions to understanding the role of AI in English language teaching. For instance, Bilewumo *et al.* (2025) ^[2] highlight the effectiveness of AI in supporting second-language learners through adaptive and engaging learning environments.

Elkali and Abad (2025) ^[5] further reveal that instructors perceive AI as a valuable tool for reducing workload, saving time, and enhancing student motivation, although concerns about overdependence and inadequate training persist. Similarly, Lionel *et al.* (2024) and Mbegbu and Emelogu (2025) ^[3, 7] demonstrate that AI improves teaching efficiency and students' writing proficiency, while Gambo *et al.* (2026) ^[6] emphasize that although lecturers in Nigerian polytechnics show moderate awareness of AI, actual utilization remains limited due to infrastructural and institutional constraints. Despite these growing bodies of research, a critical gap remains. Most existing studies have focused either on general higher education contexts, student perceptions, or broad national-level analyses, with limited attention to polytechnic lecturers at the state level, particularly in Bauchi State. Furthermore, there is insufficient empirical evidence that simultaneously examines lecturers' level of awareness, perceived benefits, and the specific challenges they face in integrating AI into the teaching of English communication skills. This gap limits the development of context-specific strategies for effective AI adoption in polytechnic education. This study, therefore, seeks to address this gap through examining the level of awareness and exposure of English communication lecturers to AI tools. It also seeks to identify the perceived benefits of AI integration, and explore the challenges hindering its effective use in Polytechnics in Bauchi State.

Research Questions

The study is guided by the following research questions:

1. What is the level of awareness and exposure of English communication lecturers in Polytechnics in Bauchi

- State to Artificial Intelligence (AI) tools used in teaching English communication skills?
2. What are the perceived benefits of integrating Artificial Intelligence (AI) in the teaching of English communication skills among lecturers in Polytechnics in Bauchi State?
 3. What are the perceived challenges hindering the integration of Artificial Intelligence (AI) in the teaching of English communication skills among lecturers in Polytechnics in Bauchi State?

Theoretical Framework

This study is underpinned by two complementary theories: the Technology Acceptance Model (TAM) and the Diffusion of Innovations Theory (DOI). These theories provide a vigorous framework for understanding lecturers' awareness, acceptance, and adoption of Artificial Intelligence (AI) tools in teaching English communication skills in polytechnics.

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM), developed by Davis (1989), explains how users come to accept and use a new technology. The model identifies two key determinants: Perceived Usefulness (PU) and Perceived Ease of Use (PEOU). Perceived usefulness refers to the degree to which an individual believes that using a particular technology will enhance job performance, while perceived ease of use refers to the extent to which a person believes that using the technology will be free of effort. In the context of this study, TAM is relevant in explaining how English communication lecturers in polytechnics perceive AI tools as beneficial and easy (or difficult) to use in their teaching practices. For instance, lecturers are more likely to adopt AI tools such as automated writing assistants or adaptive learning platforms if they believe these tools will improve teaching efficiency, enhance students' communication skills, and reduce workload (perceived usefulness). Similarly, if AI tools are user-friendly and require minimal technical expertise (perceived ease of use), lecturers are more likely to integrate them into their instructional practices.

Furthermore, TAM helps to explain the perceived benefits and challenges examined in this study. Challenges such as lack of training, technical complexity, and limited infrastructure may negatively influence perceived ease of use, thereby reducing lecturers' willingness to adopt AI technologies. Thus, TAM provides a useful lens for analysing lecturers' attitudes toward AI integration in English language teaching.

Diffusion of Innovations Theory (DOI)

The Diffusion of Innovations Theory, proposed by Rogers (2003), explains how new ideas, technologies, or practices spread within a social system over time. The theory identifies key elements influencing adoption, including innovation characteristics, communication channels, time, and social systems. It also categorizes adopters into groups such as innovators, early adopters, early majority, late majority, and laggards. DOI is particularly relevant to this study as it explains how AI technologies are introduced, communicated, and gradually adopted among lecturers in polytechnics. The theory highlights important attributes of innovation that influence adoption, including relative advantage, compatibility, complexity, trialability, and observability.

In this study, AI tools will be more readily adopted if lecturers perceive them as having a clear advantage over traditional teaching methods (relative advantage), aligning with existing teaching practices (compatibility), and being easy to understand and use (low complexity). However, barriers such as lack of institutional support, inadequate infrastructure, and limited opportunities for experimentation (trialability) may slow down the diffusion process. DOI also helps explain variations in lecturers' levels of awareness and exposure to AI tools. Some lecturers may be early adopters who actively experiment with AI technologies, while others may be more resistant due to uncertainty or lack of access. This variation is important for understanding the uneven integration of AI in polytechnic education.

The integration of TAM and DOI provides a comprehensive framework for this study. While TAM focuses on individual lecturers' perceptions and attitudes toward AI (usefulness and ease of use), DOI explains how these technologies spread within the institutional and social context of polytechnics. Together, the two theories align closely with the study's research questions:

- Awareness and exposure are explained by DOI through diffusion processes and communication within the institution.
- Perceived benefits are captured by TAM through perceived usefulness.
- Challenges are linked to both TAM (ease of use barriers) and DOI (structural and systemic barriers to adoption).

Through the combination of these theories, the study gains a deeper understanding of both the individual and institutional factors influencing the adoption of AI in teaching English communication skills. This integrated theoretical approach is essential for explaining not only whether lecturers adopt AI tools, but also why and how adoption occurs within the specific context of polytechnics in Bauchi State.

Methodology

Research Design

This study adopts a qualitative research design. Specifically, it uses semi-structured interviews to explore lecturers' awareness, perceived benefits, and challenges associated with the integration of Artificial Intelligence (AI) in the teaching of English communication skills. The qualitative design is considered appropriate because it allows for an in-depth understanding of participants' lived experiences, opinions, and interpretations regarding the use of AI in teaching. The use of semi-structured interviews provides flexibility in data collection which enable the researcher to follow a guided set of questions and also allow participants to freely express their views and provide additional relevant information. This approach ensures depth, richness, and contextual understanding of the phenomenon under investigation.

Population and Sample

The population of the study comprises all English language or communication skills lecturers in polytechnics in Bauchi State. From this population, a sample of ten (10) lecturers was selected from two polytechnics, with five lecturers drawn from each institution. The choice of a sample size of ten participants is justified by the qualitative nature of the study, which emphasizes depth of understanding rather than statistical generalization. In qualitative research, relatively

small sample sizes are appropriate for exploring participants' experiences in detail and achieving data saturation. Therefore, the selected sample size is considered adequate for generating rich and meaningful insights into lecturers' perceptions of AI integration.

Sampling Technique

The study employs purposive sampling to select participants who have relevant knowledge, experience, or exposure to the use of Artificial Intelligence or digital tools in teaching English communication skills in their institutions. This technique ensures that only information-rich participants are included in the study. Purposive sampling is widely used in qualitative research because it enabled the researcher to intentionally select individuals who can provide detailed and relevant insights into the research problem. In this study, it ensures that the selected lecturers are well-positioned to discuss the integration of AI in teaching and learning processes.

Data Collection Instrument

The main instrument for data collection is a semi-structured interview guide. The interview guide consists of open-ended questions designed to elicit lecturers' responses on their awareness of AI tools, perceived benefits of AI in teaching English communication skills, and the challenges they encounter in using such technologies. The semi-structured nature of the interview allows the researcher to probe further where necessary, clarify responses, and explore emerging issues in greater depth. This flexibility enhances the richness and authenticity of the data collected.

Data Collection Procedure

Prior to data collection, permission was obtained from the selected polytechnics and lecturers. Thereafter, appointments were scheduled with the selected lecturers at their convenience. The semi-structured interviews were conducted through face-to-face and through virtual platforms, depending on accessibility and participants' preferences. Each interview was guided by the interview protocol but allowed for spontaneous follow-up questions to capture detailed and meaningful responses. With participants' consent, the interviews were audio-recorded to ensure accurate transcription and analysis.

Data Analysis Technique

The qualitative data generated from the semi-structured interviews were analysed using thematic analysis. This involved transcribing the interview recordings, coding the data, and identifying recurring patterns and meanings across participants' responses. The codes were further grouped into broader themes that reflect lecturers' awareness, perceived benefits, and challenges of integrating AI in teaching English communication skills. This analytical approach enabled a comprehensive interpretation of the data and provided deep insights into the research questions.

Findings

The data were analysed to answer the research questions of the study. The findings are presented in the following subsections.

1. Awareness and Exposure to AI Tools

The analysis of interview data revealed two major themes: (1) Moderate awareness of AI tools and (2) Limited

practical exposure and institutional support. The findings revealed that English communication lecturers in polytechnics in Bauchi State demonstrated a moderate level of awareness of Artificial Intelligence (AI) tools used in teaching. Most of the respondents indicated that they were familiar with commonly used AI-supported applications such as grammar checkers, automated writing assistants, and presentation tools with intelligent features. However, awareness was largely limited to basic functionalities rather than advanced AI applications such as adaptive learning systems or intelligent tutoring platforms. For example, one participant noted, "I have heard about AI tools for teaching, but I don't really know how most of them work in detail." (Participant 5). This response suggests that lecturers' awareness is largely theoretical, with limited technical understanding of how AI tools function within educational contexts. Similarly, another participant stated, "We are aware of AI, but mostly the general ones like chatgpt. For language only simple ones we use for correcting grammar or generating content like Grammarly." (Participant 3). This further indicates that lecturers' familiarity is confined to basic functionalities, such as grammar correction and content generation, with little exposure to more sophisticated AI applications like adaptive learning systems. Generally, these responses reveal that while lecturers are not entirely unfamiliar with AI, their knowledge remains at a surface level and lacks depth in terms of practical and advanced usage.

Limited Practical Exposure and Institutional Support

Despite demonstrating moderate awareness of Artificial Intelligence (AI), the findings reveal that lecturers have limited practical engagement with these tools in actual classroom settings. In terms of exposure, the study found that lecturers had limited practical experience with AI tools in classroom settings. While a few lecturers reported occasional use of AI tools to support lesson preparation and content delivery, the majority indicated that they had not fully integrated these technologies into their teaching practices. Interview responses further revealed that exposure to AI was mostly self-driven rather than institutionally supported, highlighting a gap between awareness and actual usage. Their use of AI remains largely peripheral and is not fully integrated into teaching practices. For instance, one participant explained, "I don't really use AI tools in my teaching; I just use them occasionally when preparing notes." (Participant 9). This response indicates that AI usage is minimal and primarily restricted to lesson preparation rather than being actively employed during classroom instruction or student interaction. It suggests a gap between awareness and pedagogical application.

Furthermore, the findings highlight a significant lack of institutional support in terms of training and professional development. One participant stated, "We have not been trained on how to use AI in teaching, so it is difficult to apply it fully." (Participant 7). This underscores the absence of structured capacity-building initiatives, which limits lecturers' ability to confidently and effectively integrate AI into their teaching practices. Without formal training, lecturers may lack both the technical competence and pedagogical strategies required for meaningful AI adoption. In addition, the data reveal that most lecturers' exposure to AI tools is largely self-initiated rather than institutionally driven. As one participant noted, "Most of what I know about AI, I learned by myself, not from the school."

(Participant 4). This suggests that lecturers rely heavily on personal effort and informal learning to acquire AI-related knowledge. While this demonstrates individual initiative, it also highlights a systemic gap in institutional frameworks for supporting digital innovation in teaching.

In conclusion, the findings of this research question point to a disconnect between awareness and practice, largely influenced by insufficient institutional support, lack of formal training, and limited opportunities for hands-on experience. This situation constrains the effective integration of AI in teaching English communication skills and underscores the need for structured policies, training programmes, and institutional investment in educational technology.

2. Perceived Benefits of AI Integration

The analysis of interview data revealed three major themes: (1) Enhancement of teaching effectiveness, (2) Improvement in students' language skills and engagement, and (3) Reduction of lecturers' workload and promotion of student-centered learning.

Enhancement of Teaching Effectiveness

The findings indicated that lecturers generally held positive perceptions regarding the benefits of integrating AI into the teaching of English communication skills. A significant number of respondents agreed that AI tools enhance teaching effectiveness by improving lesson delivery, facilitating content generation, and providing faster feedback to students.

The findings reveal that lecturers perceive Artificial Intelligence (AI) as a valuable tool for enhancing teaching effectiveness, particularly in areas such as lesson preparation, content development, and feedback delivery. Many participants emphasized that AI simplifies instructional planning and improves the overall organization of teaching materials. For example, one participant stated, "AI helps me to prepare my lessons faster and organize my teaching materials better." (Participant 10). This suggests that AI plays a significant role in streamlining lesson planning processes, thereby enabling lecturers to deliver more structured and effective instruction.

In addition, AI was found to enhance the clarity and quality of content delivery. One participant noted, "I can generate examples and explanations easily using AI, which makes my teaching clearer." (Participant 6). This indicates that AI tools provide quick access to relevant examples and explanations, which can enrich teaching content and facilitate better understanding among students. Such capabilities support lecturers in presenting complex ideas in simpler and more accessible ways. Furthermore, participants highlighted the role of AI in improving the efficiency of feedback provision. As one lecturer explained, "Giving feedback to students is easier and faster with AI tools." (Participant 2). This demonstrates that AI can assist in delivering timely and consistent feedback, which is crucial for students' learning progression. Overall, these responses suggest that AI contributes significantly to improving instructional effectiveness by enhancing preparation, delivery, and assessment processes.

Improvement in Students' Language Skills and Engagement

The findings further show that lecturers also noted that AI contributes to improving students' language skills,

particularly in areas such as grammar, vocabulary development, and writing coherence. Additionally, respondents reported that AI tools increase student engagement by making learning more interactive and personalized. Some lecturers highlighted that AI reduces their workload by assisting with tasks such as marking, content preparation, and error correction.

The findings also indicate that lecturers perceive AI as an effective tool for improving students' language skills and increasing their engagement in learning activities. Participants noted that AI tools, particularly those related to writing and grammar support, contribute to noticeable improvements in students' communication abilities. For instance, one participant remarked, "Students improve their grammar and writing when they use AI tools regularly." (Participant 8). This suggests that AI has a direct positive impact on students' language proficiency, especially in areas such as writing accuracy and grammatical competence.

Moreover, AI was reported to make learning more engaging and interactive. One participant explained, "AI makes learning more interesting for students because it is interactive." (Participant 4). This highlights the role of AI in creating dynamic learning environments that capture students' attention and encourage active participation. The interactive features of many AI tools appear to foster greater student involvement compared to traditional teaching methods.

In addition, participants emphasized the ability of AI to support personalized learning. As one lecturer noted, "It helps students learn at their own pace, which improves their understanding." (Participant 3). This reflects the adaptive nature of AI technologies, which allow students to progress according to their individual learning needs and abilities. Such personalization enhances comprehension and retention, ultimately leading to better learning outcomes. Collectively, these findings demonstrate that AI not only improves language skills but also promotes higher levels of student engagement and motivation.

Reduction of Workload and Promotion of Student-Centered Learning

Another important theme emerging from the findings is the role of AI in reducing lecturers' workload while simultaneously promoting student-centered learning approaches. Participants indicated that AI helps automate routine and time-consuming tasks, thereby easing the burden on lecturers. For example, one participant stated, "AI reduces the stress of marking and correcting students' work." (Participant 2). This suggests that AI can handle repetitive assessment tasks, allowing lecturers to focus on more meaningful aspects of teaching.

Similarly, AI was found to enhance efficiency in preparing instructional materials. One participant noted, "It saves time, especially when preparing teaching materials and exercises." (Participant 10). This indicates that AI tools enable lecturers to generate teaching resources quickly, thereby improving time management and productivity. The time saved can be redirected towards improving teaching quality and engaging more deeply with students.

Importantly, the findings also reveal a shift in pedagogical approach facilitated by AI. As one participant explained, "With AI, students can learn more on their own, and the teacher becomes more of a guide." (Participant 6). This highlights a transition from traditional teacher-centered

methods to more student-centered learning environments, where students take greater responsibility for their learning. In this context, the lecturer assumes the role of a facilitator rather than the sole source of knowledge. Overall, these findings suggest that AI not only reduces workload but also supports more autonomous and learner-centered educational practices.

4.3 Challenges Hindering AI Integration

Despite the perceived benefits, the study identified several challenges that hinder the effective integration of AI in teaching English communication skills. The thematic analysis of interview data revealed four major challenges: (1) Inadequate infrastructure, (2) Lack of training and technical expertise, (3) Concerns about overdependence on AI, and (4) Cost, accessibility, and ethical issues.

Inadequate Infrastructure

One of the most prominent challenges reported was inadequate infrastructure, including poor internet connectivity and limited access to digital tools within the institutions. The findings indicate that poor technological infrastructure significantly limits the effective integration of AI in teaching. The findings reveal that inadequate technological infrastructure constitutes a major barrier to the effective integration of Artificial Intelligence (AI) in teaching English communication skills. Several participants highlighted persistent challenges related to internet connectivity, availability of digital facilities, and power supply. For instance, one participant noted, "The internet connection in my institution is not reliable, which makes it difficult to use AI tools during lectures." (Participant 9). This response underscores the challenge of unstable internet access, which limits the real-time application of AI tools in classroom settings and disrupts the continuity of technology-supported instruction.

In addition, limited access to essential hardware was identified as a critical constraint. One participant stated, "We do not have enough computers or digital facilities to support AI-based teaching." (Participant 7). This suggests that the absence of adequate technological resources restricts lecturers' ability to adopt and integrate AI tools into their teaching practices. Without sufficient infrastructure, even lecturers who are willing to use AI may find it practically impossible to do so. Furthermore, inconsistent electricity supply was reported as another significant challenge. As one participant explained, "Sometimes there is no power supply, so using digital tools becomes impossible." (Participant 3). This highlights the broader infrastructural limitations that characterize many educational institutions, particularly in developing contexts. Finally, these findings indicate that infrastructural deficiencies, ranging from poor internet connectivity to inadequate hardware and unreliable power supply, severely constrain the effective implementation of AI in teaching.

Lack of Training and Technical Expertise

Another major challenge identified was the lack of training and technical expertise among lecturers. Many respondents indicated that they had not received formal training on how to use AI tools effectively, which limited their confidence and ability to integrate these technologies into their teaching.

Another major challenge identified in the findings is the lack of adequate training and technical expertise among

lecturers regarding the use of AI tools. Participants consistently emphasized the absence of formal training opportunities, which limits their ability to effectively integrate AI into their teaching practices. For example, one participant stated, "I have not received any formal training on how to use AI tools in teaching." (Participant 8). This reflects a significant gap in professional development initiatives aimed at equipping lecturers with the necessary digital competencies.

Moreover, the findings reveal that awareness of AI does not necessarily translate into practical application. One participant remarked, "I am aware of AI, but I don't know how to apply it effectively in my classroom." (Participant 2). This suggests that while lecturers may have a general understanding of AI, they often lack the pedagogical and technical skills required to integrate these tools meaningfully into teaching and learning processes. In addition, some participants expressed difficulties in navigating AI tools independently. As one lecturer noted, "Using AI tools can be confusing without proper guidance." (Participant 1). This highlights the need for structured support systems, including training programmes, workshops, and technical assistance, to build lecturers' confidence and competence. The findings indicate that insufficient training and lack of technical expertise significantly hinder the adoption and effective use of AI in education.

Concerns about Overdependence on AI

Additionally, some lecturers expressed concerns about overdependence on AI, noting that excessive reliance on such tools could reduce critical thinking and limit meaningful interaction between teachers and students. Issues related to cost, accessibility, and institutional support were also highlighted as barriers. The findings also reveal that some lecturers have reservations about the potential negative consequences of excessive reliance on AI tools. A major concern relates to the possible decline in students' critical thinking and independent learning abilities. For instance, one participant stated, "Students may rely too much on AI and stop thinking for themselves." (Participant 3). This reflects apprehension that overdependence on AI could discourage deep cognitive engagement and reduce students' ability to analyze and solve problems independently.

Additionally, concerns were raised about the potential impact of AI on the traditional role of the teacher. One participant noted, "AI may replace the teacher's role if not properly controlled." (Participant 5). This suggests a fear that increasing reliance on AI could diminish the relevance of lecturers in the teaching and learning process, particularly if AI tools are perceived as substitutes rather than supportive resources. Furthermore, some participants pointed to the risk of reduced interaction between lecturers and students. As one respondent explained, "There is less interaction when students depend on AI instead of engaging with the lecturer." (Participant 2). This indicates that excessive use of AI may weaken the interpersonal dimension of teaching, which is essential for effective learning. Generally, these concerns highlight the need for a balanced and guided integration of AI that complements, rather than replaces, human interaction and critical thinking.

Cost, Accessibility, and Ethical Issues

The interview findings further revealed concerns about ethical issues, such as data privacy and the reliability of AI-

generated content. These challenges collectively contribute to the slow adoption and uneven use of AI in polytechnic education. The findings further identify financial constraints, accessibility challenges, and ethical concerns as significant barriers to AI integration. Participants noted that the cost of certain AI tools limits their adoption among both lecturers and students. For example, one participant stated, "Some AI tools require payment, and not all lecturers or students can afford them." (Participant 9). This indicates that financial limitations can restrict access to advanced AI technologies, thereby creating disparities in usage.

In addition, unequal access to digital devices among students was highlighted as a major concern. One participant explained, "Not all students have access to smartphones or laptops to use AI tools." (Participant 10). This reflects the digital divide that exists within educational contexts, where some students are disadvantaged due to lack of access to necessary technological resources. Ethical issues also emerged as an important theme in the findings. As one participant noted, "There are concerns about plagiarism and misuse of AI by students." (Participant 2). This highlights challenges related to academic integrity and responsible use of AI tools. The potential for misuse raises questions about originality, authorship, and the need for clear guidelines on ethical AI use in education. Overall, these findings suggest that cost, accessibility, and ethical considerations must be addressed to ensure equitable and responsible integration of AI in teaching and learning.

Discussion

This study examined the awareness, perceived benefits, and challenges associated with integrating Artificial Intelligence (AI) in the teaching of English communication skills among polytechnic lecturers in Bauchi State. The discussion relates the findings specifically to the previous studies cited in this research and interprets them through the Technology Acceptance Model (TAM) and the Diffusion of Innovations (DOI) theory.

The findings revealed a moderate level of awareness but limited practical exposure to AI tools among lecturers. This is consistent with previous findings (e.g., Muhammad *et al.*, 2018; Dugošija, 2024) [4, 8], which suggest that although awareness of digital and AI-driven tools is increasing among educators, actual classroom implementation remains limited. This disparity between awareness and use reflects a common pattern in developing educational contexts where exposure does not automatically translate into adoption. Within the TAM framework, this can be explained by the imbalance between perceived usefulness and perceived ease of use. While lecturers recognize the value of AI, limited skills and lack of institutional support reduce ease of use, thereby constraining adoption. Similarly, DOI theory situates this at the early stages of diffusion, where knowledge exists but full implementation has not yet been achieved.

In terms of perceived benefits, the study found that lecturers believe AI enhances teaching effectiveness, supports content delivery, and improves students' language skills. These findings align with Dugošija (2024) [4], who emphasized the role of AI-powered tools such as automated writing assistants and adaptive systems in enhancing language instruction. The findings also support earlier assertions that technology-driven approaches can improve engagement and learning outcomes. Within TAM, these positive perceptions reinforce perceived usefulness, which is a key determinant of technology adoption. From a DOI perspective, this

reflects relative advantage and compatibility, as lecturers perceive AI as both beneficial and relevant to their teaching needs.

The study further revealed that AI contributes to reducing lecturers' workload and promoting student-centered learning. This finding supports previous observations that AI tools facilitate content generation, feedback provision, and instructional efficiency. Such outcomes demonstrate the practical value of AI in addressing pedagogical demands in tertiary institutions. In relation to TAM, this strengthens perceived usefulness, while DOI explains this through observability, as lecturers can directly experience improvements in efficiency and teaching outcomes.

Despite these benefits, the study identified several challenges, including inadequate infrastructure, lack of training, and limited institutional support. These findings are in line with earlier studies cited in this research, which highlight systemic barriers to effective technology integration in education. The persistence of these challenges suggests that technological innovation alone is insufficient without supportive institutional frameworks. Within the TAM model, these barriers reduce perceived ease of use, thereby limiting lecturers' willingness to adopt AI tools. Similarly, DOI theory explains these constraints in terms of complexity and limited implementation support, which slow down the diffusion process.

The findings also revealed concerns about overdependence on AI and its potential impact on critical thinking and interaction. This aligns with the broader concerns raised in the literature reviewed in this study, which caution against uncritical adoption of AI in education. While AI enhances efficiency, excessive reliance may undermine active learning and teacher-student engagement. This underscores the importance of integrating AI in a way that complements, rather than replaces, pedagogical practices. Finally, the findings demonstrate that although lecturers recognize the potential of AI to transform English language teaching, its adoption is still constrained by practical and institutional limitations. The combined application of TAM and DOI provides a comprehensive explanation: TAM explains individual acceptance based on perceived usefulness and ease of use, while DOI highlights the broader process of innovation adoption influenced by contextual and institutional factors.

Conclusion

This study investigated the awareness, perceived benefits, and challenges associated with integrating Artificial Intelligence (AI) in the teaching of English communication skills among polytechnic lecturers in Bauchi State. The findings revealed that while lecturers demonstrate a moderate level of awareness of AI tools, their practical exposure and classroom integration remain limited. This indicates a gap between knowledge of AI and its actual pedagogical application. Despite this limitation, the study established that lecturers hold positive perceptions regarding the use of AI in teaching. AI was found to enhance teaching effectiveness, improve students' language skills, increase engagement, and reduce lecturers' workload. These benefits highlight the significant potential of AI to transform traditional teaching practices into more interactive, efficient, and student-centered approaches. However, the study also identified critical challenges that hinder effective AI integration. These include inadequate infrastructure, lack of training and technical expertise, financial constraints, and

concerns about ethical use and overdependence on AI. Such barriers emphasise the need for systemic and institutional support to ensure sustainable adoption. In conclusion, while AI presents promising opportunities for improving the teaching and learning of English communication skills, its successful integration depends on addressing existing challenges. Enhancing infrastructure, providing professional development for lecturers, and establishing clear guidelines for ethical AI use are essential steps toward maximizing its potential. The study therefore contributes to a better understanding of AI adoption in educational contexts and provides a foundation for future research and policy development in this area.

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