Student Perception of AI Use in Education: Implications for Educational Gain Frameworks and Employability

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ABSTRACT

Globally, artificial intelligence chatbots have found valuable applications in multiple sectors, including education, where they provide a personalised learning approach to students. However, there are different perceptions about its use in education, as well as the benefits and potential challenges from HE students' standpoint. The current research seeks to investigate students' perspectives on the benefits and challenges associated with the use of AI in education, based on student sample representatives from the United Kingdom and Nigeria. The study adopts a cross-sectional mixed method approach to collect data, using a random-stratified sampling approach. The findings indicate that 59.1 % of the respondents were conversant with the institutional policies on AI use in education, with more students showing greater awareness in the UK (80%) compared to Nigeria (17.2%). Thematic analysis of the data reveals that the benefits of AI-powered chatbots in education include: Time management and stress reduction, Clarity and guidance, Ease of learning and accessibility, Generation of ideas and organisation. Conversely, the following themes emanated from the challenges associated with the AI-powered chatbot: Accuracy and reliability, Lack of depth and specificity, impact on learning and engagement, and accessibility and connectivity. The study further highlights the importance of contextualising AI technologies to meet the diverse educational needs of learners and offers valuable recommendations for improvement of the chatbot technology to enhance its value in education. The findings have critical implications for the Educational Gain Framework and the employability of students globally. The study therefore recommends supporting AI-enhanced learning that prioritises academic integrity, enhances student engagement, and reflects the diverse contexts of global learners.

Keywords: Artificial intelligence, Chatbot, Educational Gain, Education Systems, employability, Policy Framework

INTRODUCTION

The recent advancement of artificial intelligence (AI) technologies has led to significant, far-reaching technological advancements in various sectors, including education (Hein et al 2018; Okonkwo & Ade-Ibijola, 2021), leading to the growing number of users, estimated to exceed 1.5 billion users by 2025 (Bezrukov, 2024). Artificial intelligence is a subfield of computer science that creates technological tools that can carry out tasks that ordinarily require human intelligence (Wartman & Combs, 2018; Xianmin, 2019). A notable application of AI technology is in developing AI-powered chatbots. These chatbots possess the ability to interact and engage in conversation closely like that of humans (Hwang & Kim, 2021 Xianmin, 2019; Thomas, 2020). In education, AI-powered chatbots offer numerous advantages to learners, such as round-the-clock accessibility, providing real-time responses, and effectively supporting personalised learning more conveniently compared to other traditional methods like email communication, peer-to-peer interactions, and student-to-teacher interaction (Benotti et al., 2017; Cunningham-Nelson et al., 2019).

Despite the useful potentials of AI technology, there are diverse views and experiences with technology leading to varied levels of adoption across different countries. Factors such as the level of technological infrastructure, educational system, digital literacy, funding, and cultural factors have been identified as challenges that could impact a uniform global adoption (Emwanta & Nwalo, 2013; Agbo,2015; Oluwatayo & Ojo, 2017). There have also been concerns about the challenges associated with the use of Generative A.I in education. Researchers like Eke, (2023); Alser & Waisberg, (2023) believe its use could lead to a decline in academic rigour, Data privacy issues, plagiarism, and could pose a threat to academic integrity. However, its use could also be valuable and complementary to the traditional method of learning (Ouyang & Jiao, 2021; Cano, et al., 2023). The UNESCO recommendations advocate for continuous consultation with researchers, teachers, and learners about their views on GenAI and use the feedback to decide whether and how specific GenAI tools should be deployed at an institutional scale (UNESCO, 2023). There is limited understanding of how higher education students, particularly across different national contexts (UK vs. Nigeria), perceive the ethical use of AI chatbots and institutional policies guiding their application. More so, existing literature does not adequately address how contextual differences such as infrastructure, digital literacy, and institutional policy awareness shape the educational gains and employability outcomes associated with AI adoption in education. As we navigate the reality of AI use in education and seek ways to balance its use while maintaining academic integrity, the current study aims to explore the perceptions of students in higher education in both the United Kingdom and Nigeria, with a view to investigating the level of ethical awareness in the use of AI chatbots; knowledge of institutional policies on AI use in education; the benefits and challenges associated with AI use; and the implications for the Educational Gain Framework (EGF) and graduate employability.

METHODOLOGY

Research design

A cross-sectional mixed-methods design was employed to examine higher education students' perceptions of AI-powered chatbot use across the United Kingdom and Nigeria. The approach combined quantitative and qualitative data to provide exploratory insights into usage patterns, perceived benefits, and challenges.

sampling:

A randomised-stratified sampling strategy ensured representation across academic levels and gender. Eighty-eight valid responses were collected (Nigeria: 58; UK: 30), with qualitative data drawn from 18 participants until thematic saturation was achieved (Francis et al., 2010). Effect sizes were reported to account for limited statistical power. Due to sample size limitation, a non-parametric approach was used to carry out a test of independent, using the Chi square test.

Data collection:

Data were gathered via an online questionnaire (Google Forms) between February –April 2025, distributed through verified student platforms. This approach was piloted in both contexts to ensure clarity and cultural relevance, and measures were taken to minimise duplicate or biased responses.

Data analysis:

Quantitative data collected was subjected to descriptive statistics to provide information on the frequency of the various variables. Additionally, a Chi-square test of independence was conducted to determine whether the different educational systems had an impact on ethical awareness in the use of AI chatbots and knowledge about institutional policies on AI-powered chatbot use. These analyses were performed using SPSS version 23. Qualitative data were analysed using a two-stage process: machine learning (ML) tools for initial theme detection (Fitkov-Norris & Kocheva, 2023) followed by manual refinement to ensure accuracy and reliability. The ML approach to thematic analysis has the potential to automatically detect research themes even with small data sets, although the results vary across the different AI tools, hence the need for a follow-up manual refinement.

Ethical considerations

Ethical approval was granted by the LSST Research Centre Ethics Committee. Informed consent, anonymity, and data protection procedures were strictly observed.

FINDINGS

Table 1 presents the demographic characteristics of the respondents. Participants were drawn from Nigeria and the United Kingdom, with a total of 88 respondents recorded. Among the respondents, 65.9% were from Nigeria, and 34.1% were from the United Kingdom. The gender profile reveals that 54% of the respondents were male, while 46% were female. The respondents had a mean age of 27.3 years, ranging from 18 to 47 years. The education level of the respondents shows that 63.6% were undergraduates, and 34.3% were from the postgraduate level (see Table 1).

Table 2 shows the pattern of usage of the AI-powered chatbot by students from both educational systems. Among the students surveyed, 59.1% of respondents claimed to be aware of the ethical consideration surrounding the use of AI in education, while 25% admitted to having no such knowledge. Regarding knowledge about institutional policies on AI chatbot use, 38.6% of students reported being aware of such policies, while 61.4% stated they were not aware (see table 2).

Figure 1a shows the perception of ethical awareness in the use of AI chatbots across both education systems. The data shows that 80% of respondents from the United Kingdom were aware of ethical practices, compared to 48% from Nigeria. Conversely, 20% of respondents from the United Kingdom lacked such knowledge, compared to 27.5% from Nigeria. The chi-square test revealed a significant relationship ($p=0.004$) (see figure 1a).

Figure 1b shows the knowledge about institutional policies on AI use in education across the education systems. Among respondents from the United Kingdom, 80% were aware of institutional policies, compared to 17.2% from Nigeria. Conversely, 20% of respondents from the United Kingdom lacked this awareness, compared to 82.8% from Nigeria. The chi-square test confirmed a significant relationship ($p=0.001$) (see figure 1b).

DISCUSSION

The study affirms the growing concern about the current incorporation of AI in education without a commensurate effort to ensure that learners are trained to understand the ethical implications of using these tools. Although, most respondents were aware of ethical practices in using AI-powered chatbots, many were either unaware of or had not read the institutional policies regulating their use. The comparative analysis shows that students in the UK were more likely to be aware of these policies compared to those in the Nigerian education system. This may be due to the UK's more advanced digital infrastructure compared to Nigeria, supported by institutional frameworks that promote compliance and awareness (Atherton, Lewis, & Bolton, 2024; Adesina et al., 2021).

Thematic Analysis of students' perspectives on the benefits of AI chatbots in education, many themes and variables become apparent:

Time management and Stress Reduction (see table 3): Using AI-powered chatbots affords learners and researchers time efficiency in carrying out academic tasks. For instance, one participant shared: "I don't spend as long on projects and assignments anymore. I just use AI for everything" Similarly, another noted: "It provides Straight to the point responses. Makes research faster and easier". AI chatbots allow for real-time responses to queries and prompts made by students, ensuring quick access to information. The time efficiency of AI-powered chatbots is one of its most widely recognised advantages. Labadze et al. (2023) opined that educators and learners can enhance academic activity using AI-powered chatbots. For instance, AI-powered

chatbots, like ChatGPT, allow students to retrieve summaries and explanations instantly, reducing the need for extensive manual searches (Zhai, 2022). This aligns with respondents' experiences, where assignments and projects are completed faster due to the rapid response nature of Artificial intelligence tools. Also, AI chatbots can enable educators to manage their time correctly and improve pedagogy (Labadze et al.,2023).

Clarity and Guidance (see table 3):

Respondents highlighted that using AI-powered chatbots provides clarity and guidance in solving complex tasks. One respondent stated, "It helps me with clarity and guidance in helping me out." AI-powered chatbots provide clear insights on topics irrespective of the academic field or discipline. Using AI, students could enable learners to gain personalised learning experience that enhances their overall academic performance (Hein et al, 2018; Okonkwo & Ade-Ibijola, 2021). By identifying patterns, trends, and relationships in data, AI algorithms can make intelligent predictions about learner needs, preferences, and future performance (Okonkwo & Ade-Ibijola, 2021). This enables adaptive learning systems to dynamically adapt content, pacing, and teaching strategies to individual learner needs, facilitating a personalised and streamlined learning experience (Joshi, 2024). According to Holmes et al. (2019), AI systems personalise content delivery, enhancing clarity and understanding. Tools like AI tutors or writing assistants guide students through complex topics, reflecting the experiences shared by respondents in simplifying assignments and providing structured guidance. This support fosters greater autonomy in learning, as Anh & Thuy (2024) highlighted.

Ease of Learning and Accessibility (see table 3):

Respondents believe that one of the advantages of AI chatbots is that they make learning easy and accessible to all. According to Cunnigham-Nelson et al. (2019), AI-powered chatbots provide a focused, personalised, result-oriented online learning environment that resonates with today's educational institution needs, where inclusivity and differentiated learning are the focus. With AI tools, students can access learning materials anywhere and anytime. The role of AI in democratising access to learning materials is well-documented (Kamalov et al., 2023; Prinsloo & Khalil, 2024). This resonates with the theme of AI benefiting students who cannot afford it. Studies, such as those by Sun and Zhang (2020), highlight how AI-driven platforms expand access to educational resources for underprivileged students, addressing economic disparities. For example, open-access AI tools can replace expensive textbooks, enabling equitable learning opportunities for all. As one of the respondents put it, "A.I is helpful in our academic activities, especially for those who are less privileged to buy textbooks". This means the accessibility of the AI tool is not only valuable for its ease of learning but also democratises access to education for the less privileged in society.

Generation ideas (see table 3): AI-powered chatbots play the role of intelligence amplification (IA) as they can use information technology to augment human intelligence (Carter & Michael, 2017). Respondents noted that the AI-powered chatbots assist them in generating ideas and provide starting points for reflection in their reports and essays. AI-powered chatbots enhance information retrieval by using machine learning algorithms to analyse vast datasets and provide creative avenues for learning (Shukla et al., 2022). According to research by Floridi and Cowls (2019), AI extends human creativity by offering novel perspectives and alternatives. As one of the respondents stated, "It gives me an idea of how to go about writing the assignment, i.e., how I should structure the report. This aligns with the respondents' view that AI gives general ideas and sparks inspiration for academic writing. Such benefits could find practical applications in creative industries and academic disciplines requiring innovative thinking. Also, students found using AI chatbots fascinating for research as they enable them to organise their work better. The AI tools are renowned for their ability to streamline research and organise information, providing a framework for learners to build on and develop further.

CHALLENGES

While the use of AI chatbots has come with benefits, responses in this research also emphasized some of the challenges that have come with the technological advancements.

Accuracy and Reliability Issues (see table 3): Many respondents highlighted that AI-generated text is often inaccurate and not reliable. One of the most cited challenges of AI-powered chatbots is their potential to produce inaccurate or misleading information (Meyrowitsch et al., 2023). Studies have highlighted that while AI-powered chatbots like GPT-based chatbots can generate plausible-sounding answers, they may include errors or fabricated details (Bender et al., 2021).

Lack of Depth and Specificity (see table 3): Respondents hold the view that AI-powered chatbots lack the capability to generate innovative, creative, and contextual content. As one participant shared, "One of the challenges of using AI-powered chatbots for academics is that it doesn't give full explanation to a question but instead shortens it." Another noted, "The major demerit of AI-powered chatbots is that their answers are generic." This phenomenon is described by scholars as "shallowness bias" in AI systems, where the models prioritise brevity over depth (Kasneci et al., 2023; Floridi & Cowls, 2019). Although generative models, the backbone of modern AI-powered chatbots, can modulate the patterns of the outputs they generate, they still rely on the input training data sources, often resulting in monotonous and non-creative content (Biswas, 2023).

Impact on Learning and Engagement (see table 3): Over-reliance on AI chatbots has some implications for learners, as it has been shown to impact learning and self-confidence negatively (Placed et al., 2022). One respondent stated: "It significantly reduces the challenge or urge to learn and understand courses". Placed et al. (2022) highlighted that the ease of use and accessibility of generative AI tools could foster over-reliance, inhibiting self-dependence, creative problem-solving, and lateral thinking (Zhai et al., 2024; Kim et al., 2021). Others, like Selwyn (2020), caution against over-reliance, which may impair critical thinking and originality. While using AI chatbots offers plenty of benefits to learners, balancing AI as a supportive tool rather than a replacement for human effort is essential for maximising its benefits while mitigating potential drawbacks.

Accessibility and connectivity (see table 3): Another major challenge for some users was the lack of essential resources to access AI tools as one of the respondents mentioned" "The only challenge is the network of the data '. While there appears to be a global transformation in education with the introduction of AI systems to facilitate learning, individuals in certain regions may struggle to keep pace with this progression because of various factors, which may include socioeconomic status (Emwanta & Nwalo, 2013; Agbo,2015; Oluwatayo & Ojo, 2017). Other respondents shared, "Need for improvement on orientation on how to use AI". As the use of chatbots becomes engrained into academic activities, there is also the possibility of marginalising some users who lack digital literacy, leading to a 'digital divide' in AI technology. The works of scholars like van Dijk (2020), Eynon & Malmberg, (2021) highlight how technological innovations could exacerbate existing inequalities, leaving digitally illiterate populations disadvantaged in accessing new educational tools effectively. The report by UNESCO (2021) on global digital access highlights the importance of addressing connectivity barriers to ensure equitable access to AI-based educational tools.

Implications of Findings for Educational Gain Framework, Graduate Outcomes, and Employability of Students

The findings of this study have significant implications for the Educational Gain Framework (EGF) in the UK and the employability of UK students in an increasingly AI-driven economy. The EGF aims to capture a holistic view of student development, including academic achievement, digital literacy, ethical awareness, and employability skills (Falloon, 2020). The higher awareness of institutional AI policies among UK students compared to their Nigerian counterparts reflects the benefits of an advanced digital infrastructure and institutional support (Atherton, Lewis, & Bolton, 2024; Adesina et al., 2021). The readiness to engage ethically with AI tools aligns closely with the EGF's emphasis on digital competence and ethical use of technology (Bharathithasan & Srinivasan, 2024). Students' reports that AI chatbots improve time management, reduce stress, and provide more explicit guidance. This directly supports elements of the EGF relating to academic confidence and resilience (Labadze et al., 2023). These competencies translate into enhanced employability, as employers increasingly seek graduates capable of leveraging AI technologies while maintaining critical thinking and ethical judgement (Hein et al., 2018; Holmes et al., 2019). Furthermore, the personalised learning enabled by AI tools fosters autonomy and problem-solving skills, which are key employability attributes in the modern labour market (Joshi, 2024; Anh & Thuy, 2024). This will therefore have a positive impact on the graduate outcomes, which is a critical requirement by the Office for Students (OfS).

However, concerns about over-reliance on AI, "shallowness bias" outputs, and reduced motivation (Kasneci et al., 2023; Placed et al., 2022; Selwyn, 2020) highlight the risk of students lacking essential cognitive and creative skills. This highlights the importance of pedagogical interventions that encourage the balanced use of AI alongside human agency, critical reflection, and contextual learning, which are central to the EGF (Okonkwo & Ade-Ibijola, 2021; UNESCO, 2023). Without this balance, there is a risk that AI tools may hinder deeper learning processes, which are critical for adaptability and innovation in the workplace. Therefore, embedding AI literacy and ethical guidelines into curricula, along with clear institutional policies and ongoing training for students and educators, is vital to maximise AI's educational benefits and enhance employability and positive graduate outcomes (Ryan, 2020; Malmberg, 2021). This approach supports the development of graduates equipped with digital fluency, ethical awareness, and critical thinking skills, positioning them for success in evolving job markets where AI competency is increasingly demanded (Bommasani et al., 2021).

CONCLUSION

The study reveals the perceptions of higher education students regarding the integration of AI in education. The findings reveal substantial benefits such as enhanced time management, reduced stress, greater clarity in understanding concepts, facilitation of learning processes, and support in generating ideas. These benefits underscore the transformative potential of AI in democratising educational access, particularly for students from resource-constrained societies. Conversely, the study identifies pertinent challenges regarding the accuracy and reliability of chatbot responses, insufficient depth and contextualisation. Additionally, infrastructural inadequacies, which were revealed to be experienced by learners in Nigeria, further exacerbate the challenges associated with the effective implementation of AI technology in education. Uneven awareness regarding institutional policies as well as ethical considerations surrounding the use of AI tools points to a critical need for the establishment of clearer guidelines and enhanced institutional engagement in this realm. There is a need to contextualise the integration of AI within educational frameworks. To harness the benefits of technology while maintaining academic integrity, it is recommended that educators, policymakers, and technology developers collaborate to create AI technologies that prioritise academic integrity, enhance student engagement, and accurately reflect the diverse contexts of global learners.

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APPENDICES

Table1: Demographic characteristics of the respondents

Variable	Category	Frequency	Percentage (%)
Educational system	Nigeria	58	65.9
	United Kingdom	30	34.1
Educational Level	Undergraduate level	56	63.6
	Postgraduate level	32	34.4
Gender	Male	48	54.5
	Female	40	45.5
	Mean	**Min**	**max**
Age	27.3	18	47

Table 2: General pattern of usage of the AI-powered chatbot by students from both educational systems.

Variable	Category	Frequency	Percentage (%)
Are you aware of the ethical usage of A.I. powered chatbot for academic work?	Yes	52	59.1
	No	22	25.0
	Maybe	14	15.9
Are you aware/read the AI policy of your institution?	Yes	34	38.6
	No	54	61.4

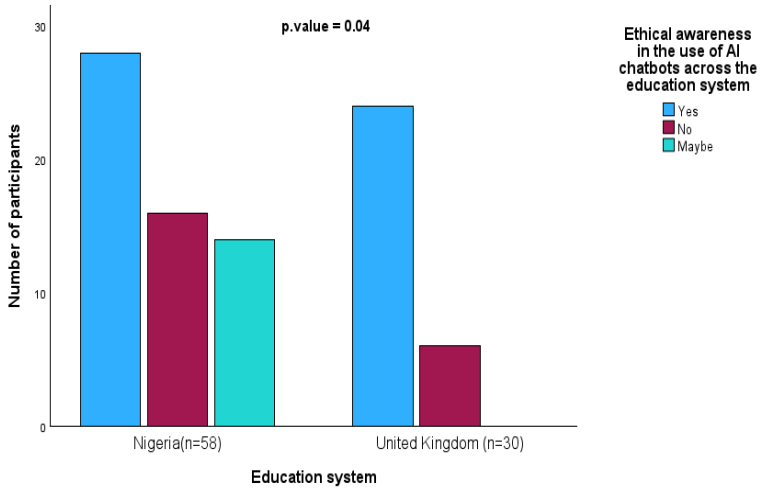

Figure 1b

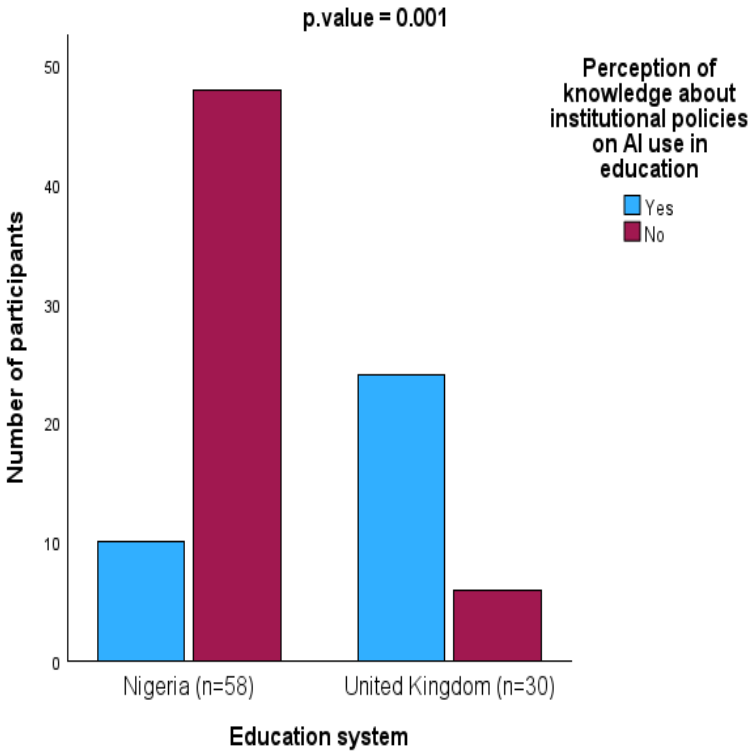

Table 3: Themes and key quotes emanating from the qualitative analysis

Research questions	Themes	Key Quotes
Describe how A.I powered chatbot is helpful for your academic activities?	Time management and stress reduction • Clarity and Guidance • Ease of Learning and Accessibility Generate ideas and enhances work structure.	"I don't spend as long on projects and assignments anymore. I just use AI for everything" "It provides Straight to the point responses. Makes researches faster and easier". "A.I is helpful in our academic activities especially for those who are less privileged to buy textbooks". "It helps to arrange answers in chronological order and thus reducing the time to do my assignments and others". "It helps me with clarity and guidance in helping me out." "It gives a straightforward answer in very little time. No stress at all. You only have to ask. I use it for my past questions study, assignment, etc" "It gives me an idea of how to go about writing the assignment i.e., the way I should structure the report.
What are the challenges of using	• Accuracy and Reliability	"Other students might use the same points I use from AI-powered chat bots for

AI-powered chatbots for your academic activities?	Issues • Lack of Depth and Specificity • Impact on Learning and Engagement • Accessibility and connectivity	assignments or projects". "Need for improvement on orientation on how to use AI" "One of the challenges of using AI powered chatbots for academics is that, it doesn't give full explanation to a question but Instead it shortens it". "The only challenge is the network of the data provider" "Sometimes is not always correct, it might be misleading". "It is hard to distinguish false from true information and it's also difficult to reference the site the AI got the information from" "It significantly reduces the challenge or urge to learn and understand courses". "Most of the references it generates are not correct" "It is hard to distinguish false from true information and it's also difficult to reference the site the AI got the information from" "It's not as accurate without giving it specific prompts" "Most of the references it generates are not correct" "The major demerit of Ai-powered chatbots is that his answers are generic".