

ARTIFICIAL INTELLIGENCE (AI) AND EDUCATION IN NIGERIA: THE STUDY OF UNIVERSITY OF CALABAR, 2020 - 2025

Godwin O. AGAMA
*Department of Administration
Federal Radio Corporation of Nigeria
Headquarters, Abuja
godwinodeyagama@gmail.com*

Abstract

This study examines the impact of Artificial Intelligence (AI) on education in Nigeria, with a specific focus on the University of Calabar (UNICAL) between 2020 and 2025. It explores how AI technologies have influenced teaching, learning, research, and administrative practices within the institution, situating these developments within Nigeria's broader digital transformation agenda as articulated in the National Digital Economy Policy and Strategy (2020–2030). The research adopts a descriptive-analytical methodology, drawing on qualitative data from institutional records, interviews with faculty and postgraduate students, and scholarly literature on AI integration in higher education. The primary aim is to assess how AI adoption has enhanced educational outcomes and institutional efficiency at UNICAL. Specific objectives include identifying the extent of AI utilisation across academic and administrative functions, evaluating infrastructural and ethical challenges, and assessing the prospects for sustainable AI integration within the university's educational framework. This study is underpinned by the Technology Acceptance Model (TAM) and the Diffusion of Innovation (DOI) theory, which elucidate the behavioral, institutional, and systemic factors affecting the adoption and integration of AI technologies by lecturers, students, and administrators at UNICAL in educational and administrative settings; and highlights both the opportunities and threats posed by AI, ranging from personalized learning, data-driven research, and plagiarism detection to ethical dilemmas such as AI dependency, academic dishonesty, and data privacy risks. The findings of this study reveal that AI adoption at UNICAL has improved research productivity, digital literacy, and administrative efficiency but remains uneven due to infrastructural deficits, low AI literacy, inadequate training, and weak institutional governance. Unreliable internet access and insufficient policy guidance limit the actual use of AI among lecturers and students, despite high levels of acceptance. The study concludes that sustainable AI integration requires coordinated investments in infrastructure, human capacity development, and ethical governance. The study recommends, among other things, that AI deployment aligned with local realities and academic standards, such as those at the University of Calabar, can transform artificial intelligence into a sustainable driver of inclusive, innovative, and ethically grounded education in Nigeria.

Keywords: *Artificial Intelligence, Higher Education, University of Calabar, Educational Technology, Digital learning*

Introduction

In recent years, the global landscape of education has been undergoing a remarkable transformation driven by technological advancements, with artificial intelligence (AI) emerging as a critical catalyst. Artificial intelligence, broadly defined as the simulation of human intelligence in machines programmed to think, learn, and make decisions, has become increasingly relevant across sectors, including education.¹ As educational institutions strive to improve the quality, accessibility, and efficiency of teaching and learning, AI offers innovative tools and approaches that can reshape traditional academic models. This transformation is particularly crucial in higher institutions of learning such as the University of Calabar, where the development of future teachers and educational professionals must align with global best practices.

The rapid diffusion of Artificial Intelligence (AI) into higher education has prompted urgent empirical and policy questions across the Global South: how do AI tools alter teaching, learning, and research; who benefits; and what institutional conditions are required for equitable, ethically responsible adoption? In Nigeria, these questions have acquired particular urgency as universities constrained by uneven digital infrastructure and limited research capacity grapple with the twin promises and challenges of AI between 2020 and 2025. This study examines the dynamics at the University of Calabar (UNICAL) from 2020 to 2025. It asks how AI has affected pedagogical practice, student learning outcomes, and postgraduate research support at UNICAL, and it situates empirical observations within broader debates about capacity, governance, and curriculum reform in Nigerian higher education.

Without contradiction, Artificial Intelligence (AI) has emerged as one of the most transformative technologies of the 21st century, reshaping industries, governance, and education worldwide. In higher education, AI offers opportunities to enhance teaching, learning, and administrative processes through intelligent tutoring systems, predictive analytics, adaptive learning platforms, and automated student support services². Globally, universities are increasingly

¹ O. T. Ebiringa, C. O. Ikerionwu, A. I. Erike, and B. C. Asiegbu. "Generative AI Adoption in Nigerian Higher Education: Benefits, Challenges, and Opportunities." *African Journal of Humanities and Contemporary Education Research*, vol. 20, no. 1, 2025, p. 281.

² J. A. Udang, and O. O. Odey, "Artificial Intelligence and Educational Outcomes of Students of College of Education; University of Calabar Cross River State, Nigeria", Vol. 5, 2, 2025, p. 310

adopting AI-driven solutions to personalise learning experiences, improve efficiency, and prepare students for a digital future. However, the integration of AI into education in developing countries, particularly Nigeria, presents unique challenges and opportunities that warrant scholarly investigation.

Nigeria's education sector has long grappled with overcrowded classrooms, inadequate infrastructure, limited access to quality teaching resources, and uneven student performance. The University of Calabar, one of Nigeria's prominent federal universities, provides a compelling case study for examining how AI technologies have been introduced and utilised between 2020 and 2025. This period coincides with a global surge in AI adoption, accelerated by the COVID-19 pandemic, which forced institutions to explore digital and automated solutions for continuity in teaching and learning. The University of Calabar's experience reflects both the promise and the limitations of AI in addressing systemic educational challenges in Nigeria. The aim of the study is to critically examine the impact of Artificial Intelligence (AI) on education in Nigeria, with particular focus on the University of Calabar (UNICAL), 2020 and 2025, by evaluating how AI technologies have influenced teaching, learning, research, and institutional administration within the university system. The objectives of the study include;

- i. To analyse the extent to which AI technologies have been integrated into teaching, learning, and research activities at the University of Calabar.
- ii. To evaluate the impact of AI on the academic performance of students and the productivity of postgraduate research.
- iii. To identify the infrastructural, human capacity, and governance challenges that hinder the effective adoption of AI at UNICAL.
- iv. To ascertain the ethical implications and concerns about academic integrity that accompany the use of AI in higher education and
- v. Interrogate the potential opportunities and necessary policy frameworks for promoting sustainable AI integration at UNICAL and other similar Nigerian universities.

The significance of this study lies in its potential to contribute to the discourse on educational innovation in Nigeria. By situating AI within the realities of a Nigerian university, the research underscores the importance of contextualised solutions rather than wholesale adoption of foreign

models. It also emphasises the need for policy frameworks that support digital transformation in education, while addressing ethical concerns such as data privacy, equity, and the risk of over-reliance on technology. Moreover, the findings from the University of Calabar can serve as a blueprint for other Nigerian universities seeking to harness AI to advance education. Notwithstanding its great promise, the degree to which AI influences educational performance in Nigerian higher education institutions remains underinvestigated. The majority of research initiatives have focused on industrialised nations, with comparatively few empirical studies undertaken in Nigerian public universities and educational institutes. Consequently, there is an urgent need to examine the impact of AI adoption on students' academic achievement and professional development in specific environments, such as the University of Calabar.

Methodology

The study adopts a qualitative analytical methodology and utilises the historical method of data collection, which relies on both primary and secondary sources. The primary source of data was obtained from oral interviews conducted within the area of study, while secondary sources included books, journal articles, yearbooks, magazines, newspapers, and internet sources, which shed more light on the subject matter. Data generated from both primary and secondary sources were carefully evaluated, synthesised, analysed, and integrated into the content analysis of the subject matter under investigation, from where conclusions were drawn and enduring recommendations put forward.

Theoretical Framework

This study is grounded in two interrelated theoretical perspectives: the Technology Acceptance Model (TAM) and the Diffusion of Innovations Theory (DOI). Both theories are foundational to understanding the behavioural, institutional, and systemic dynamics that influence the adoption of AI technologies in higher education. They provide a dual framework for interpreting how individuals and institutions at the University of Calabar (UNICAL) accept, utilise, and diffuse AI innovations in teaching, learning, and research contexts. In the context of this study, Fred D. Davis's Technology Acceptance Model (TAM) (1986) is pertinent for elucidating the behaviour of lecturers, students, and administrative personnel at the University of Calabar as they engage with AI-driven tools, including ChatGPT, Turnitin, Learning Management

Systems (LMS), and AI-powered library databases. How useful and user-friendly these stakeholders perceive the technologies to be largely influences their adoption and integration of AI in academic activities. It explains how users come to accept and use new technologies. According to the model, two key constructs, Perceived Usefulness (PU) and Perceived Ease of Use (PEOU), determine users' attitudes toward technology, which in turn influence their behavioural intention to use it. "Perceived usefulness" refers to the degree to which a person believes a system enhances job performance, while "perceived ease of use" denotes how effortless the individual believes the system will be to use.³ Therefore, TAM provides a useful analytical lens for understanding why AI adoption at UNICAL remains uneven, despite its recognised benefits for teaching, learning, and research.

The Diffusion of Innovation Theory (DOI), introduced by Everett M. Rogers (1962, revised 2003), provides a broader sociological perspective on how innovations spread within organisations and societies. The theory identifies five key attributes influencing adoption: relative advantage, compatibility, complexity, trainability, and observability. It also categorises adopters as innovators, early adopters, early majority, late majority, and laggards, each reflecting varying levels of openness to innovation⁴. The DOI framework, when applied to the University of Calabar, elucidates the dissemination of AI technologies across various departments, faculties, and administrative units.

Rogers' model underscores that successful diffusion depends not only on the innovation's technical superiority but also on institutional readiness, communication channels, leadership commitment, and cultural compatibility. This is evident in UNICAL's experience, where infrastructural challenges, limited training, and ethical concerns have slowed the widespread adoption of AI, even though the institution acknowledges its transformative potential.⁵ However, the combination of TAM and DOI offers a holistic explanation of AI adoption and its educational

³ R, N Naseri, and Muhammad Syukri Abdullah. "Understanding AI Technology Adoption in Educational Settings: A Review of Theoretical Frameworks and Their Applications." *Information Management and Business Review*, vol. 16, no. 3(I), 2025, p. 177

⁴ R. F. Drența, M. Diana-Elena, and Dan Adrian Pop. "Technology Adoption: Element of Diffusion Theory." *Review of Management and Economic Engineering*, 2025, p. 98.

⁵ A Anayochukwu, "Artificial Intelligence Awareness and Adoption Patterns in Nigerian Universities." *World Journal of Information Technology*, vol. 9, no. 5, 2025, p 108

impact at UNICAL. While TAM focuses on individual-level determinants such as perceived usefulness and ease of use, DOI broadens the lens to include institutional, cultural, and systemic factors influencing diffusion. Together, they enable a multidimensional understanding of how AI technologies penetrate academic institutions, shape teaching and learning experiences, and interact with broader governance and policy frameworks.

AI Integration and Education Advancement in UNICAL

The University of Calabar (UNICAL) has been at the forefront of integrating Artificial Intelligence (AI) into its educational framework, aligning with Nigeria's broader ambition to enhance its digital economy. This section explores how UNICAL has incorporated AI, examining curriculum development, faculty training, administrative applications, and collaborative efforts. The University of Calabar (UNICAL) has gradually adopted Artificial Intelligence (AI) to improve the way it teaches and runs its business. This integration aligns with national policies, such as the National Digital Economy Policy and Strategy (2020–2030), which emphasises the importance of AI in transforming Nigeria's educational landscape.⁶ According to an interview with Edidiong Effiong, this alignment reflects UNICAL's growing realisation that modernisation is no longer optional but essential for global competitiveness.⁷

Recognising the transformative potentials of AI, UNICAL has initiated the inclusion of AI-related courses within its academic programmes. Departments such as Computer Science and Educational Technology have developed specialised modules focusing on machine learning, data analysis, and AI ethics. These courses aim to equip students with the necessary skills to navigate and contribute to the evolving technological landscape. However, integrating AI into the curriculum is not without challenges. A study by Idika et al. highlighted that while there is an increasing awareness of AI among lecturers, the application of AI tools in teaching research methods remains limited. The study found that only a small percentage of lecturers actively utilise AI in their instructional practices, citing factors such as lack of training and resources as significant

⁶ A Anayochukwu, "Artificial Intelligence Awareness and Adoption Patterns in Nigerian Universities." *World Journal of Information Technology*, vol. 9, no. 5, 2025, p. 112.

⁷ E. Edidiong, 50+, Male, ICT Staff, University of Calabar, Interviewed on 13th, August, 2025

barriers.⁸ This was confirmed by an interviewed lecturer, Nkese Bassey, who stated that many lecturers remain hesitant because they lack hands-on experience and structured institutional support

To bridge the gap between AI theory and practice, UNICAL has implemented faculty development programmes to enhance lecturers' competencies in AI applications. These programs include workshops, seminars, and collaborative research projects that focus on the practical implementation of AI in education. Despite these efforts, challenges persist, which Obidiebube et al. noted that the current low level of AI awareness and integration in Nigeria limits the ideal extent of AI impact on educational systems. The study emphasises the need for increased collaboration among stakeholders to enhance AI integration in educational institutions.⁹ Michael Owan emphasised that although workshops are organised, many staff members find them too brief and insufficient for developing real mastery of AI tools.¹⁰

In addition to academics, UNICAL has investigated the use of AI to optimise administrative procedures. Artificial intelligence systems have been used for functions including student enrolment, examination scheduling, and resource allocation. These systems aim to minimise human error, enhance productivity, and deliver data-driven insights for decision-making. However, the adoption of AI in administration is still in its nascent stages. Temitope et al. pointed out that while AI has the potential to enhance administrative functions, the lack of infrastructure and skilled personnel hampers its widespread implementation.¹¹ Supporting this view, administrative staff member Rose Out from the ICT Unit explained during an interview that persistent internet downtime often disrupts attempts to automate routine processes.

Understanding the importance of collaboration in advancing AI initiatives, UNICAL has sought partnerships with both local and international organisations. These collaborations aim to

⁸ D. O. Idika, E. E. Ekpo, E.B. Arikpo, C.I. Idika, and S. U Okeke, "Assessment of Lecturers' Awareness and Utilisation of AI Tools for Effective Teaching of Research Methods in the University of Calabar, Nigeria." *Global Journal of Pure and Applied Sciences*, vol. 31, no. 2, 2025, p. 326

⁹ J. I. Obidiebube, *et.al*, "Prospects and Challenges of AI Integration into Nigerian Educational Systems." *International Journal of Library Science and Educational Research*, vol. 7, no. 8, 2025, p. 199

¹⁰ M. Owan, 50+, Male, Public Servant, University of Calabar, interviewed on 18/08/2025

¹¹ A Sharma, "How AI Is Revolutionising Change Data Capture." *Data Science Central*, 13 June 2023, <https://www.datasciencecentral.com/how-ai-is-revolutionizing-change-data-capture>.

provide access to cutting-edge AI technologies, facilitate knowledge exchanges, and support joint research endeavours. Ebiringa highlighted that such partnerships are crucial for the successful integration of AI in higher education. Through strategic collaborations, universities can overcome resource constraints and accelerate the adoption of AI technologies.¹² Gabriel Nkanu stressed that these partnerships expose UNICAL scholars to global best practices that the university cannot yet provide internally. UNICAL's efforts to integrate AI into its educational framework reflect a commitment to modernising academic and administrative practices.

Impacts of AI on Academic Performance in UNICAL

Artificial intelligence can transform education in Nigeria by meeting the diverse learning needs of students, enhancing institutional effectiveness, and optimising administrative operations. AI-driven adaptive learning systems customise the educational experience for individual students according to their strengths, weaknesses, and learning preferences. These systems evaluate student performance data and adjust the curriculum and instructional resources accordingly, ensuring that students receive tailored support and achieve improved learning outcomes. Moreover, AI-powered educational tools and platforms provide engaging, stimulating learning experiences that accommodate diverse learning styles.¹³ Grace Ekeng, in an interview, noted that many UNICAL students using adaptive platforms such as MATHIA now show improved engagement because the tools “speak their learning language.” Conversely, the integration of Artificial Intelligence (AI) in the University of Calabar has emerged as a transformative tool, offering innovative solutions to enhance learning outcomes and address educational disparities. Extensive use of AI techniques has sped up research across a range of fields, resulting in innovative academic breakthroughs. However, the integration of AI has both positive and negative impacts on academic performance in the Nigerian educational sector, and these impacts are evident at the University of Calabar across all levels of academic research.

¹²O.T Ebiringa, *et.al.* “Generative AI Adoption in Nigerian Higher Education: Benefits, Challenges, and Opportunities.” *African Journal of Humanities and Contemporary Education Research*, vol. 20, no. 1, 2025, p. 288

¹³ A.Oloruntoba, *et.al.* "Interactive Learning Platforms: Enhancing Education with AI." *Computers in Human Behaviour*, vol. 121, 2021, p.933.

Positive Impacts

The integration of AI at the University of Calabar has yielded significant advances in data analysis. It is argued that the application of AI in research can analyse vast amounts of data with utmost accuracy and efficiency in an infinitesimal period of time. Data analysis using AI technologies has the potential to "identify patterns, correlations, and trends that may not be easily discernible through traditional methods. Data analysis is an important aspect of a research study. Improper analysis can impact the results and mislead the application. AI tools such as JULIUS and GPT-4's advanced data analysis can autonomously analyse and visualise complex datasets, revealing hidden patterns that can guide further research.¹⁴ Supporting this, an interviewed postgraduate student, Joyce Omini in an interview stated that AI-assisted data analysis reduced the time spent on her thesis from "weeks of manual coding to just a few hours of automated pattern extraction."

Furthermore, the application of Artificial Intelligence (AI) methodologies in fundamental research can significantly enhance knowledge synthesis and literature reviews. Artificial intelligence (AI) systems can rapidly analyse a diverse array of academic articles and extract relevant data and information for research. A primary requirement in academic research is identifying a gap in the literature. Numerous academic authors have consistently grappled with this issue because they frequently replicate others' work. This issue often arises from the difficulty of managing the overwhelming volume of material in the research domain. Advanced artificial intelligence (AI) technology facilitates the analysis of literature to identify the disparity between established and unexamined research. AI tools such as SCISPACE and Jennie can assist in producing first literature evaluations. Two instruments that assist in the formulation of literature reviews are TLDR and AskYourPDF. These platforms augment research and academic achievement at the University of Calabar.¹⁵ During an interview, a senior lecturer, Emmanuel

¹⁴M.E. Ekeng, and C. L. Inyang. "Utilisation of Information Communication Technology by Library and Information Science Undergraduate Students in the University of Calabar, Calabar, Nigeria." *Global Journal of Educational Research*, 2023, p. 6

¹⁵M. E. Ekeng, and C. L. Inyang. "Utilisation of Information Communication Technology by Library and Information Science Undergraduate Students in the University of Calabar, p. 7.

Isang in an interview, explained that AI-assisted literature searches have enabled younger academics to “avoid duplication and actually discover new frontiers in their research areas.”

Plagiarism detection is one big challenge in academic research. As Uya observed, plagiarism in scholarship has become a major problem. A worldwide study reported that 86% of students cheated while studying, 76% copied assignments word-for-word from others, and 70% used their electronic devices to cheat.¹⁶ Menshawey et al., who attempted to determine plagiarism among Covid-19 concluded that plagiarism was prevalent in COVID-19 publications. It is better to fail in originality than to succeed in imitation. Proponents of artificial intelligence have argued that AI tools drastically address the issue of plagiarism. Using natural language processing, AI can forgo traditional algorithms for detecting plagiarism in favour of software that identifies whole sentences or paragraphs that have been reworded.¹⁷ Prince Michael, a postgraduate student at the University of Calabar in an interview averred that, in line with the university’s drive to checkmate plagiarism in academics, the postgraduate college has now made it compulsory for PG students to use some AI-powered platforms like Turnitin to check the plagiarism index in their theses and dissertations. He further confirmed that UNICAL’s Postgraduate School now mandates the use of Turnitin, and many students feel “more accountable and cautious” when preparing their thesis

Another impact of AI is the identification of dubious submissions. In academic research all over the world, academic integrity is crucial. Intentional disinformation or factual distortion is a prevalent ethical concern in academic research. When the data in the article is grim and difficult to sift through, how can we be sure it is accurate? Artificial intelligence (AI) tools are said to be able to resolve dubious submissions. Accordingly, artificial intelligence (AI) tools such as "Mirror Think" can assist academics in examining papers, confirming dubious claims, and serving as watchful defenders of academic integrity.¹⁸ During an interview, ethics committee member Rose Ogar noted that AI verification tools have helped the committee “flag suspicious abstracts long before they enter the publication pipeline.”

¹⁶ O. E. Uya, Ethics and Thesis Supervision. Paper delivered at the University of Calabar graduate School Workshop on Thesis Supervision in the University of Calabar, Nigeria, 2015.

¹⁷ I. A. Uno, *et.al.* “Artificial Intelligence and Academic Research: Understanding the Potential and the Threats to Academic Writing.” *Ianna Journal of Interdisciplinary Studies*, vol. 6, no. 2, 2024, p.37

¹⁸ I. A. Uno, *et.al.* “Artificial Intelligence and Academic Research: 38.

Another instance of academic theft in research writing is data manipulation. To arrive at a preset or intended outcome, researchers frequently alter data. Morally reprehensible academics who lack the creativity to write creatively frequently use earlier works and manipulate the published data to fit their goals. This type of academic stealing is on the rise. Data theft and modifications to fit corrupt purposes can result from unauthorised access to data, and such changes can be detected by AI technology.¹⁹ An interviewed statistician, Daniel Obasi, from the ICT Unit, stated that AI-enabled anomaly detection systems have already exposed “several datasets that appeared too perfect to be genuine.”

Poor grammar remains a constant challenge in academic writing. Many articles have been denied publication not on account of irrelevance but because of poor grammatical expressions. This challenge is dominant among non-English-speaking writing communities. AI grammar checkers have been found to correct grammatical errors comprehensively. AI technology edits articles with nearly perfect accuracy and produces grammatically correct English. Blessing Inyang, in an interview, shared that AI proofreading helped her “move from repeated supervisor corrections to clean, publishable chapters.” QuillBot, Grammarly, and ChatGPT, as AI tools, can polish manuscripts with real-time corrections. Citations acknowledge the sources of ideas that support one's research. If the citation is not done correctly, it could result in academic penalties. Journals also employ various referencing styles, which undergo frequent modifications. Most writers often find it difficult to painstakingly format their references accurately. The use of ChatGPT as an AI tool can accurately format references in any referencing style, such as APA, Chicago, or MLA.²⁰

Negative Impact

Although the integration AI into education alleviates educational stress and enhances learning experiences via its tools, it also poses numerous downsides. Machine-assisted academic writing poses significant challenges to scholarly research, introduces numerous drawbacks in

¹⁹ A. Sharma, “How AI Is Revolutionising Change Data Capture.” *Data Science Central*, 13 June 2023, <https://www.datasciencecentral.com/how-ai-is-revolutionizing-change-data-capture>.

²⁰ J. A. Udang, O. O. Ogar, and B. U. Akor. “Artificial Intelligence and Educational Outcomes of Students of College of Education, University of Calabar, Cross River State, Nigeria.” p.309

education, and may be a substantial hindrance to the intellectual rigour of purported academics. We delineate several of the threats below. In an interview, Helen Otu remarked that many students now “skip the intellectual struggle” required in research because AI gives them answers too quickly, weakening their analytical discipline.

One of the negative impacts of integrating AI into the educational system is that it erodes the rigour in academic research; another peril of AI in scholarly study is that it undermines the rigour traditionally associated with it. Academic writing rigor pertains to the meticulousness, consistency, and transparency of the research. Samuel Effiong explained that several postgraduate students “trust AI-generated results without verifying them,” leading to unreliable research findings. It pertains to employing rigorous methodologies to guarantee that study outcomes are trustworthy, reliable, transportable, and verifiable. The use of computers for writing restricts most researchers from engaging in fieldwork with human participants and from consistently observing their behaviour. Academic writing is anticipated to be stringent. They ought to be analytical and discerning regarding their production choices, guided by their views and experiences.²¹

Another threat posed by the use of AI is that reliance on AI for creating academic articles diminishes the creativity inherent in human intelligence. Accordingly, human intelligence is defined as the mental quality that encompasses the ability to learn from experience, adapt to novel situations, comprehend and manage abstract concepts, and utilise knowledge to influence one's environment. This cognitive skill enables individuals to acquire knowledge from experiences and concepts, generate novel ideas based on those experiences, and comprehend and utilise logic and reasoning. Machines have not yet attained this intricate cognitive capability at the level of Artificial Narrow Intelligence (ANI), which represents the current operational standard of AI. Employing AI to cultivate academic writing will forfeit the nuanced sensitivity inherent in scholarship.

A further peril of AI to scholarly study is the facilitation of academic lethargy. Understanding indolence as a condition characterised by laziness, idleness, or a pervasive lack of motivation to participate in activities will elucidate its meaning. It signifies an inclination to evade work, energy, or effort. Indolence, often regarded as a detrimental trait, may hinder personal development, efficiency, and achievement. Academic research entails vigour and diligence, ultimately yielding original outcomes through scholarly dedication to productivity. AI instils a

²¹ A. Edu, 30+, Male, Post-graduate Student, University of Calabar, Interviewed on 13th August, 2025

sense of ease and nonchalance in researchers who depend on it, as the program can generate up to 90% of their academic articles. The productivity of higher education students is adversely affected as a consequence. Students no longer compose their own papers, as AI software can swiftly produce an essay of approximately 3,000 words in minutes.²² In the near future, educational institutions reliant on AI software will yield graduates with significantly constrained understanding of academic tasks. AI would generate artificial scholars by diminishing their cognitive abilities, and it would compel researchers to think like algorithms without comprehension. Task automation fosters complacency among scholars.

Critical thinking, according to Scriven and Richard, "is the intellectually disciplined process of actively and skillfully conceptualising, applying and analysing, synthesising, and evaluating information gathered from or generated by observation, experience, reflection, reasoning, or communication as a guide to belief and action"²³ People who think critically consistently attempt to live rationally, reasonably, and empathically. They work diligently to develop the intellectual virtues of integrity, civility, empathy, intellectual sense of justice, and confidence in reason. These qualities provide researchers with a sense of commitment and fulfilment. The beauty of scholarly research also lies in the knowledge of the methods of logical inquiry and reasoning. AI machines deny the bonding that critical thinking offers in a research endeavour. In the long run, scholars will become passive learners unable to think critically and independently. Because AI machines and software are not human, they cannot offer these high cognitive skills, including metacognition, which are associated only with intelligent humans. Machines do not think and, therefore, cannot reflect. They merely execute tasks as programmed. In all, AI hinders the development of important cognitive skills.

In the quest for efficiency, as AI proponents advocate, humans are likely to be eliminated from significant intellectual endeavours. The supremacy of AI aims to reduce human involvement to enhance the efficiency of the peer review process for article publication. The assertion is that this procedure will be mechanised without the participation of academic personnel. Intelligent

²² S. F. Ahmad, H. Heesup, et al, "Impact of Artificial Intelligence on Human Loss in Decision Making, Laziness and Safety in Education." *Humanities and Social Sciences Communications*, vol. 10, no. 1, 2023, p. 8.

²³ A.Sharma, "How AI is Revolutionising Change Data Capture." *Data Science Central*, 13 June 2023, <https://www.datasciencecentral.com/how-ai-is-revolutionizing-change-data-capture>.

individuals remain essential in peer review processes and other significant academic endeavours. The portrayal of machines as excessively rapid and precise in decision-making is not universally accurate. It has been contended that machines are not inherently fair, efficient, or preferable to human intervention. AI will elicit a human repudiation effect in academic research endeavours, particularly in research evaluation. As AI advances, the traditional function of academics in research evaluation will decline and become inconsequential, rendering them redundant in this context²⁴

AIgism is another concerning impact of AI. It refers to the unethical use of artificial intelligence tools to replicate or clone academic work. The prevalence of AIgism among academic writers has risen sharply due to the convenience and assistance offered by modern AI software. Tools such as ChatGPT and NERD AI facilitate this practice, often making it difficult to detect. Scholars have expressed concern over the irresponsible and unethical use of artificial intelligence chatbots by students to promote academic dishonesty in schools. Such misuse undermines originality and compromises the integrity of learning and research.²⁵ With the demonstrated ability of tools like ChatGPT to generate coherent and contextually appropriate responses on virtually any subject, the challenge of AI-assisted plagiarism has become increasingly complex. Recent studies highlight that these technologies are now being used to complete essays and academic assignments across universities, signalling a new era of AI-supported academic misconduct. Furthermore, some writers and researchers have adopted these tools to generate content, perpetuating the cycle of AIgism within academia.²⁶ In an interview, James Uyang stated that AIgism cases have risen sharply, with many students submitting “machine-generated essays disguised as their own work.”

Ultimately, the rise of AIgism presents a serious ethical dilemma in education. It devalues genuine scholarly effort and calls for urgent institutional frameworks to detect and regulate the misuse of artificial intelligence in academic writing and research. The academic

²⁴O. O. Mumeen, *et.al.* “*Artificial Intelligence: An Innovative Paradigm Shift for Librarians and Information Scientists.*” University of Calabar Press, 2023.p.181

²⁵ I. A. Uno, *et.al*, p.144

²⁶ J. Uyang, 50+, Male, Lecturer, University of Calabar, Interviewed on 11th, August, 2025

community must, therefore, balance the benefits of AI with policies that safeguard intellectual integrity and originality. An interview with Rosemary Akpan revealed that the university is already “overwhelmed with cases of AI-aided misconduct,” prompting calls for new regulations.

Finally, the issue of copyright has been a serious problem, as questions have arisen about who holds copyright when AI generates an essay. Two entities should be disputing the copyright ownership. The individual who supplied the command that produced the content via the software will assert ownership. The trainers of the chatbot who supplied the dataset will be entitled to assert copyright. This ambiguity and strain often result in legal disputes.

Challenges of AI Integration in UNICAL

Artificial intelligence holds immense promise for reshaping teaching, research, administration, and student support across Nigerian universities, including the University of Calabar (UNICAL). The institution already demonstrates interest in digital services and ICT adoption, yet the transition from potential to practice is fraught with structural and human challenges that must be addressed deliberately. Empirical studies conducted at the University of Calabar highlight several interrelated obstacles to meaningful AI integration, ranging from infrastructural deficits to ethical concerns.

One of the most pressing challenges is the infrastructure gap and the digital divide. While UNICAL has invested in SmartCampus systems, persistent issues, including sporadic electricity, low bandwidth, and restricted campus connectivity, undermine the usability of cloud-based or data-intensive AI applications. Research by Adie et al. underscores how uneven device access and high data subscription costs make advanced technologies slow, unreliable, or practically unusable for many students and staff. Even where connectivity exists, peak-time bandwidth problems hinder performance, meaning only a fraction of the university community can benefit from AI systems. Until bandwidth resilience, affordable last-mile access, and reliable electricity are secured, AI adoption will remain uneven and exclusionary.²⁷

²⁷ P. I. Adie, A. E. Bisong, and O. M. Obuop. “Nigeria’s Digital Divide and the Promise of Offline Internet for Remote Learning for Post-COVID-19 Sustainability.” *Inter-Disciplinary Journal of Science Education (IJ-SED)*, vol. 3, no. 1, 2021, p. 119

Equally significant is the issue of digital literacy and human capacity. Studies on ICT utilisation at the University of Calabar reveal deficiencies in practical skills, insufficient training, and disparate levels of preparedness among students and staff. Without intentional capacity development, AI risks becoming an opaque tool, superficially employed or misappropriated, thereby stalling academic progress. Ekeng and Comfort emphasise that capacity building must extend beyond technical training to include pedagogical adaptation.²⁸ Lecturers, for instance, need to learn how to redesign assignments, assessments, and supervision in ways that harness AI productively and ethically. Without such holistic training, AI may exacerbate inequalities rather than enhance learning.

Governance and institutional policy also pose formidable barriers. Despite investments in ICT services, governance deficiencies such as inadequate ICT personnel, limited professional development, and poor inter-unit coordination reduce UNICAL's ability to implement and sustain new systems at scale. Agbor et al. note that successful AI initiatives require dedicated technical teams, including data engineers, platform administrators, and privacy officers, as well as clear institutional regulations on procurement, vendor lock-in, and accountability.²⁹ In the absence of such governance frameworks, pilot AI projects risk stagnation, failing to align with broader university objectives.

Funding and sustainability challenges compound these issues. AI solutions often demand substantial initial investments in servers, licensed platforms, and cybersecurity, followed by ongoing costs for maintenance, training, and data storage. Adie et al observe that government initiatives and sporadic interventions are insufficient; universities must commit to continuous resource allocation or pursue sustainable public-private partnerships. In Nigeria's constrained financial context, this remains a daunting hurdle, limiting the scalability of AI adoption.³⁰

²⁸ M. E Ekeng, and C. L. Inyang. "Utilisation of Information Communication Technology by Library and Information Science Undergraduate Students in the University of Calabar, Calabar, Nigeria." *Global Journal of Educational Research*, 2023, p. 6.

²⁹ C. N. Agbor, *et.al.* "Impact of Electronic-Governance on Students' Management in Environmental Education Department, University of Calabar – Calabar, Nigeria." *Mediterranean Journal of Social Sciences*, vol. 15, no. 4, July 2024, p. 143.

³⁰ M. Ebe 50+, Female, Lecturer, University of Calabar, interviewed on 11th August. 2025.

Ethical and academic integrity concerns further complicate the integration process. AI introduces risks of plagiarism, ghostwriting, unfair automated assessments, and the deskilling of students who may over-rely on machines for critical thinking. Inyang et al caution that without clear academic rules, AI could compromise educational quality and integrity. Addressing these concerns requires revising academic norms, reconfiguring assessments, and fostering transparent discourse about the appropriate use of AI in teaching and research. Ethical safeguards must be embedded into institutional strategies to ensure AI enhances rather than undermines academic standards.

Another critical challenge is the contextual relevance of AI solutions. Many AI platforms are developed outside Nigeria, trained on datasets that fail to reflect local languages, pedagogies, or curricula. Adie et al argue that localised content, offline AI assistants, and low-resource models are more suitable for UNICAL's environment than resource-intensive global platforms.³¹ Adapting AI to align with local curricula and languages is essential to optimise effectiveness and foster acceptance among students and staff. Finally, research gaps hinder the evidence-based adoption of interventions. While UNICAL researchers have documented ICT usage and e-governance outcomes, there is limited empirical data on AI pilot projects, cost-benefit analyses, or long-term pedagogical impacts. Establishing robust, locally evidence-based through carefully evaluated pilot programs, interdisciplinary collaborations, and partnerships with technology developers will enable UNICAL to make informed investment decisions and craft contextually relevant policies.

Taken together, these challenges illustrate that AI integration at UNICAL is not simply a matter of acquiring technology. It requires a comprehensive strategy that addresses infrastructure, human capacity, governance, funding, ethics, and contextual relevance. The university already possesses pockets of ICT capacity and a clear interest in digital transformation, but broad AI benefits will not materialise automatically. If UNICAL embeds AI adoption within a framework that prioritises inclusion, training, and local relevance, it can harness AI not as a fleeting technological trend but as a sustainable amplifier of teaching, research, and student success. In this way, the institution stands at a practical inflexion point: by confronting its challenges with

³¹ P. I. Adie, A. E. Bisong, and O. M. Obuop. "Nigeria's Digital Divide and the Promise of Offline Internet for Remote Learning for Post-COVID-19 Sustainability." p.119

evidence-based, locally grounded responses, UNICAL can transform AI from promise into practice.

Prospects of AI in UNICAL

The prospects for artificial intelligence (AI) at the University of Calabar (UNICAL) are significant but contingent on coordinated investments in infrastructure, capacity building, and governance. Empirical studies demonstrate that addressing institutional barriers can enable AI to accelerate research productivity, enhance teaching and learning, and modernise library and information services.

First, AI promises to strengthen postgraduate research and self-directed learning. A multi-institution study that includes University of Calabar participants found that postgraduate students express high acceptance of AI tools and perceive them as useful for literature search, data analysis, and just-in-time clarification of research concepts; yet actual use remains modest. This gap between positive attitude and limited practice suggests that UNICAL can realise substantial gains by integrating AI into formal research support and embedding AI tools into research methods curricula, offering supervised practice with large-language models for literature synthesis, and providing sanctioned platforms for reproducible data analysis so students can translate acceptance into sustained, ethically sound use.³²

Second, classroom teaching and student outcomes stand to benefit where AI is applied thoughtfully. Evidence from studies within the College of Education at UNICAL indicates a small but statistically significant positive relationship between the integration of machine-learning tools and students' academic outcomes.³³ The practical implication for UNICAL is to pilot adaptive learning systems and automated formative-assessment tools in teacher-education programs, where modest effect sizes can be amplified through scale, iterative design, and faculty development. Importantly, the College of Education research also underlines that not all AI subfields produce

³² V. J. Owan, *et.al.* "Acceptance and Use of Artificial Intelligence for Self-Directed Research Learning among Postgraduate Students in Nigerian Public Universities." *Discover Education*, vol. 4, 2025, p.13.

³³ J.A. Udang, O.O. Ogar, and B. U. Akor. "Artificial Intelligence and Educational Outcomes of Students of College of Education, University of Calabar, Cross River State, Nigeria." *International Journal of Arts Management and Professional Studies*, vol. 5, no. 2, 2025, p. 309

equal gains (computer-vision applications showed no significant effect), so institutional pilots should be targeted and evidence-led.

Third, university libraries are a natural locus for early, high-impact adoption of AI. UNICAL library scholars frame AI as a “paradigm shift” for librarianship, enabling automated cataloguing, smarter discovery systems, personalised research assistance (e.g., chatbots for reference services), and OCR-based digitisation workflows that make UNICAL’s archival collections more discoverable. A library-centred strategy can deliver campus-wide value rapidly. Libraries can host compliant AI services, curate training datasets from institutional repositories, and provide mediated access to mitigate the risks of misuse while improving the user experience.³⁴

However, realising these prospects requires confronting clear constraints. UNICAL-based research repeatedly identifies infrastructural shortfalls (bandwidth, compute access), low levels of hands-on AI literacy among faculty and students, and ethical concerns about accuracy, privacy, and academic integrity. Any realistic roadmap must therefore combine (a) investment in shared compute and reliable connectivity; (b) phased upskilling for faculty and postgraduate researchers, embedded into departmental workloads; and (c) institutional policies that clarify acceptable AI uses in assessment, supervision, and scholarship.³⁵

Finally, governance and locally grounded research are essential. UNICAL has the opportunity to lead regionally by producing context-sensitive datasets, piloting ethically governed AI services (for libraries, research support, and pedagogy), and publishing evaluative studies that measure both educational impact and equity outcomes. By coupling pragmatic pilots with rigorous evaluation and by leveraging the university library as an early hub, UNICAL can convert the current enthusiasm for AI into sustained institutional capacity and scholarly advantage.³⁶

Conversely, AI’s prospects at UNICAL are real and multifaceted, from enhanced postgraduate research and adaptive pedagogy to smarter libraries and institutional services. Achieving these benefits demands an integrated strategy of infrastructure, targeted pilot capacity-

³⁴ R. E. Otu. 30+, Female, Admin. Officer, University of Calabar, Interviewed on 13th, August, 2025

³⁵ R. N. Robinson, “Artificial Intelligence: Its Importance, Challenges and Applications in Nigeria.” *Direct Research Journal of Engineering and Information Technology*, vol. 5, no. 5, 2018, p.39

³⁶ C. Romero, and V. Sebastian. “Educational Data Mining and Learning Analytics: An Updated Survey.” *Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery*, vol. 10, no. 3, 2020, p.57

building, and clear ethical governance—a strategy that recent UNICAL-affiliated studies both recommend and make feasible through incremental, evidence-based steps.³⁷

Conclusion

Between 2020 and 2025, the University of Calabar (UNICAL) has experienced a significant but uneven shift toward Artificial Intelligence (AI) and digital learning technologies. AI adoption has been driven largely by the need for improved access, modernised teaching, and enhanced research productivity. While progress is evident, the transformation remains incomplete due to persistent infrastructural, ethical, and institutional challenges common in many Global South contexts.

AI has delivered clear benefits. In teaching, adaptive platforms now support personalised learning. In research, tools such as ChatGPT, SciSpace, and Turnitin have strengthened academic writing, data analysis, and originality, especially among postgraduate students. Administrative processes are gradually becoming more efficient through AI-assisted systems. However, these gains are limited by barriers such as poor internet connectivity, unstable power supply, low digital literacy, and the absence of strong institutional policies. Without improved training, governance, and infrastructure, AI risks widening existing inequalities instead of reducing them.

The future requires a holistic strategy anchored in infrastructure, human capacity, and governance. UNICAL must invest in reliable digital resources, empower staff and students through continuous training, and implement clear policies on ethical AI use, data protection, and academic integrity. University-wide AI ethics guidelines and stronger interdepartmental coordination will be essential. UNICAL has the potential to lead AI-driven higher education in Nigeria, but this will depend on sustained policy action and strategic partnerships. Ultimately, AI can strengthen the university's mission only when deployed responsibly, inclusively, and ethically. The next decade will determine whether AI becomes a tool for empowerment or dependence. For UNICAL, the critical task is to turn artificial intelligence into *authentic intelligence* that reflects local realities and supports societal advancement.

³⁷ N. Bassey, Male, 50+, Lecturer, University of Calabar, interviewed on 7th August 2025.

Bibliography

- Adesulu D. Nigeria: Jamb Admission Shortfall-Nigeria Needs 1 M Varsity Spaces. Vanguard Newspaper. 2018.
- Adie, Paul Ingiona, Anthony Etta Bisong, and Otu Michael Obuop. "Nigeria's Digital Divide and the Promise of Offline Internet for Remote Learning for Post-COVID-19 Sustainability." *Inter-Disciplinary Journal of Science Education (IJ-SED)*, vol. 3, no. 1, 2021, pp. 117–128.
- Agbor, Comfort N., *et al.* "Impact of Electronic-Governance on Students' Management in Environmental Education Department, University of Calabar – Calabar, Nigeria." *Mediterranean Journal of Social Sciences*, vol. 15, no. 4, July 2024, pp. 140–143.
- Ahmad, Sayed Fayaz, *et al.* "Impact of Artificial Intelligence on Human Loss in Decision Making, Laziness and Safety in Education." *Humanities and Social Sciences Communications*, vol. 10, no. 1, 2023, pp. 1–11.
- Akpan, Rosemary, 40+, Female, Admin Officer, University of Calabar, interviewed on 13th August, 2025
- Anayochukwu, A. "Artificial Intelligence Awareness and Adoption Patterns in Nigerian Universities." *World Journal of Information Technology*, vol. 9, no. 5, 2025, pp. 101–114.
- Archibong, Patience, 40+, Female, Admin. Officer, University of Calabar, Interviewed on 9th August. 2025.
- Atlast.ti. "Transparency and Rigour in Research" (2023). www.atlasti.com. Accessed 13/08/2025
- Bradley, Vaughn M. "Learning Management System (LMS) Use with Online Instruction." *International Journal of Technology in Education (IJTE)*, vol. 4, no. 1, 2021, pp. 68–92.
- Daramola, Olawande, *et al.* "Implementation of an Intelligent Course Advisory Expert System." *International Journal of Advanced Research in Artificial Intelligence (IJARAI)*, vol. 3, no. 5, 2014, pp. 6–12.
- Drența, Raul Florentin, Diana-Elena Micle, and Dan Adrian Pop. "Technology Adoption: Element of Diffusion Theory." *Review of Management and Economic Engineering*, 2025, Pp. 94–101.
- Ebe Margaret. 50+, Female, Lecturer, University of Calabar, interviewed on 11th August. 2025.
- Ebiringa, O. T., C. O. Ikerionwu, A. I. Erike, and B. C. Asiegbu. "Generative AI Adoption in Nigerian Higher Education: Benefits, Challenges, and Opportunities." *African Journal of Humanities and Contemporary Education Research*, vol. 20, no. 1, 2025, pp. 285–304.
- Edidiong Effiong, 50+, Male, ICT Staff, University of Calabar, Interviewed on 13th, August, 2025
- Edu Anthony, 30+, Male, Post-graduate Student, University of Calabar, Interviewed on 13th August, 2025
- Effiong, Samuel. 40+, Male, Lecturer, University of Calabar, Interviewed on 9th August. 2025
- Ekeng, Martina Ekpenyong, and Comfort Linus Inyang. "Utilisation of Information Communication Technology by Library and Information Science Undergraduate Students

- in the University of Calabar, Calabar, Nigeria.” *Global Journal of Educational Research*, 2023, pp. 1–8.
- Eneh, O. C. “Nigeria’s Vision 20:2020 – Issues, Challenges and Implications for Development Management.” *Asian Journal of Rural Development*, vol. 1, no. 1, 2011, pp. 21–40.
- Etim, Joseph, 40+, Male, Post-graduate Student, University of Calabar, interviewed on 9th August. 2025.
- Grace Ekeng, 50+ Female, Lecturer, University of Calabar, interviewed on 16th August, 2025
- Idika, Delight Omoji, *et al.* "Assessment of Lecturers' Awareness and Utilisation of AI Tools for Effective Teaching of Research Methods in the University of Calabar, Nigeria." *Global Journal of Pure and Applied Sciences*, vol. 31, no. 2, 2025, pp. 323–341.
- Ijeoma Ekwueme, 40+ Female, Lecturer, University of Calabar, interviewed on 16th August, 2025
- Inyang, Comfort O., *et al.* “Students’ Use of Information and Communication Technology in the Faculty of Allied Medical Sciences, University of Calabar.” *Journal of Medical Education*, 2017, pp. 1–10
- Liverpool, Lennox S. O., *et al.* “Towards a Model for Learning in Nigerian HEIs: Lessons from the University of Jos ICT Maths Initiative.” *Proceedings of the ICT Conference*, Obafemi Awolowo University, Ile-Ife, 2009.
- Menshawey, Rahma Osama, *et.al.* "A Plagiarism Paperdemic: Determining Plagiarism among COVID-19 Articles in Infectious Disease Journals between 2020 and 2021." *Bulletin of the National Research Centre*, vol. 47, no. 151.
- Mumeen, Omoniyi Otun, *et al.* “*Artificial Intelligence: An Innovative Paradigm Shift for Librarians and Information Scientists.*” University of Calabar Press, 2023.
- Naseri, Roszi Naszariah, and Muhammad Syukri Abdullah. “Understanding AI Technology Adoption in Educational Settings: A Review of Theoretical Frameworks and Their Applications.” *Information Management and Business Review*, vol. 16, no. 3(I), 2025, pp. 174–181.
- Ndzibah D, Ofori C. “Opportunities of E-Learning in Developing Countries. Evolving Pedagogy”. 2017.
- Nkang David, 30+, Male, ICT Staff, University of Calabar, interviewed on 11th August. 2025.
- Nkese Bassey, 50+, Male, Lecturer, University of Calabar, Interviewed on 13th, August, 2025
- Nkese Bassey, Male, 50+, Lecturer, University of Calabar, interviewed on 7th August 2025.
- Obidiebube, Joyce Ifeoma, *et al.* "Prospects and Challenges of AI Integration into Nigerian Educational Systems." *International Journal of Library Science and Educational Research*, vol. 7, no. 8, 2025, pp. 195–202.
- Okon, Mercy, 40+, Female, Lecturer, University of Calabar, Interviewed on 11th, August, 2025

- Oloruntoba, A., Oladipo, R. A., Afolabi, O. S., and Oke, A. O. "Interactive Learning Platforms: Enhancing Education with AI." *Computers in Human Behaviour*, vol. 121, 2021, p. 106933.
- Otu, Helen. Female, 40+, Admin. Officer, University of Calabar, interviewed on 7th August. 2025
- Owan, Valentine Joseph, *et al.* "Acceptance and Use of Artificial Intelligence for Self-Directed Research Learning among Postgraduate Students in Nigerian Public Universities." *Discover Education*, vol. 4, 2025, pp. 1–20.
- Robinson, Reagan N. "Artificial Intelligence: Its Importance, Challenges and Applications in Nigeria." *Direct Research Journal of Engineering and Information Technology*, vol. 5, no. 5, 2018, pp. 36–41.
- Romero, Cristobal, and Sebastian Ventura. "Educational Data Mining and Learning Analytics: An Updated Survey." *Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery*, vol. 10, no. 3, 2020, pp. 56–78.
- Rose Otu. 30+, Female, Admin. Officer, University of Calabar, Interviewed on 13th, August, 2025
- Sharma, Akash. "How AI Is Revolutionising Change Data Capture." *Data Science Central*, 13 June 2023, <https://www.datasciencecentral.com/how-ai-is-revolutionizing-change-data-capture>.
- Udang, Joseph Akor, Ogar Ogar Odey and Bliss Unimashi Akor. "Artificial Intelligence and Educational Outcomes of Students of College of Education, University of Calabar, Cross River State, Nigeria." *International Journal of Arts Management and Professional Studies*, vol. 5, no. 2, 2025, pp. 307–320.
- Udang, Joseph Akor, Odey, Ogar Ogar "Artificial Intelligence and Educational Outcomes of Students of College of Education; University of Calabar, Cross River State, Nigeria", Vol. 5, 2, 2025, pp. 309-320
- Uno, Ijim Agbor, Offiong Duke Otu, Immaculata Ofu Obaji-Akpet, Christopher Iwejuo Nwagboso, Terrence Richard Eja, Emmanuel Awubi, and Gladys Denis Ukume. "Artificial Intelligence and Academic Research: Understanding the Potential and the Threats to Academic Writing." *Ianna Journal of Interdisciplinary Studies*, vol. 6, no. 2, 2024, pp. 33–52.
- Uya, Edet. Okon, Ethics and Thesis Supervision. Paper delivered at the University of Calabar graduate school workshop on thesis supervision in the University of Calabar, Nigeria, 2015.
- Uyang, James, 50+, Male, Lecturer, University of Calabar, Interviewed on 11th, August, 2025