AN EXPLORATORY STUDY OF AI USAGE AMONG ACADEMICS IN NIGERIA TERTIARY EDUCATION SECTOR

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BEING A PROJECT PRESENTED TO THE DEPARTMENT HUMAN RESOURCE MANAGEMENT, FACULTY OF MANAGEMENT SCIENCES, UNIVERSITY OF BENIN, BENIN CITY, EDO STATE IN PARTIAL FUFILMENT OF THE REQUIREMENTS FOR THE AWARD OF BACHELOR OF SCIENCE (B.Sc.) IN HUMAN RESOURCE MANAGEMENT

OCTOBER 2025

DECLARATION

I, **Emmanuel Oluwaseun OMOSOLA,** hereby declare that this project, '**An Exploratory Study of AI Usage Among Academics in Nigeria Tertiary Education Sector'** is the product of my own independent research and effort, supervised by **Dr. (Mrs.) Nekpen Okhawere.**

I also declare that this project has not been submitted in whole or in part for any other degree, diploma, or academic qualification, and that full credit has been given where references to other works have been cited.

_____ _____

Emmanuel Oluwaseun OMOSOLA **Date**

CERTIFICATION

This is to certify that this research work was done by **Emmanuel Oluwaseun OMOSOLA** with the matriculation number **MGS2104944** in the Department of Human Resource Management, Faculty of Management Sciences, University of Benin, Benin City.

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DEDICATION

I dedicate this project to Almighty God for His amazing grace, strength, and guidance throughout this journey.

Special appreciation goes to my parent **Mr Olusoji Omosola** and **Mrs Esther Omosola,** for their love, wisdom, and unwavering support, and to my siblings, whose encouragement helped me reach this milestone.

With profound appreciation, I dedicate this research project to all academics and innovators who actively engage with and advance the transformative possibilities of Artificial Intelligence in Nigeria's education sector. Your commitment and vision continue to drive a more intelligent, inclusive, and progressive academic environment.

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ABSTRACT

The growing presence of artificial intelligence (AI) in higher education is redefining academic work and learning across Nigeria. This qualitative exploratory study investigates academics' perceptions and utilization of AI tools within Nigeria's education sector. Drawing on semi-structured interviews conducted with university faculty, the research explores how AI technologies are being applied in teaching, research, and administrative processes. Results indicate that although AI is viewed as a valuable resource for improving instructional effectiveness, research efficiency, and institutional management, its practical adoption remains limited by inadequate infrastructure, lack of technical competence, and unresolved ethical issues. Participants highlighted both enthusiasm for AI's potential to enhance academic productivity and concern about its implications for academic integrity and equity. The study recommends strengthening institutional capacity through targeted training, investment in digital infrastructure, and the establishment of ethical and regulatory frameworks to guide responsible AI use. These insights add to the growing body of literature on AI integration in Nigeria tertiary education and its role in shaping the sector's future.

CHAPTER ONE

INTRODUCTION TO THE STUDY

1.0 Introduction

Artificial intelligence functions as an expert system that supports the delivery of lessons and instructional content in classrooms. Observations indicate that educational technologies currently used in many Nigerian classrooms are outdated, highlighting a need for modernized approaches to delivering instructional materials. Existing research has largely examined the effects of Information and Communication Technology (ICT) and expert systems on student outcomes at primary, secondary, and tertiary levels, but has paid less attention to the practical application of AI systems in supporting teachers' professional duties.

Artificial intelligence is a subfield of computer science focused on creating devices and systems that demonstrate behaviors associated with human intelligence. In simple terms, AI involves designing machines to perform reasoning and cognitive processes similar to humans. These systems can handle tasks such as spatial reasoning, natural language processing, and image analysis. In short, AI denotes machine-exhibited intelligence and has a wide range of contemporary applications.

1.1 Background of the study

In an era dominated by technological advances, the rise of artificial intelligence (AI) is producing profound quantitative and qualitative shifts across many aspects of life (Banasik & Kempa, 2023; Czupryna-Nowak, 2023). Education is among the sectors most affected, and it is therefore important to examine closely how technological progress reshapes teaching,identifying both the risks and the opportunities that accompany this rapid change.

Faced with the spread of AI, the education system cannot remain static; timely reforms are essential. A useful assessment of this phenomenon requires a careful appraisal of its implications for pedagogy, curriculum content, and self-directed learning. This includes reflecting on current educational practices, identifying emerging threats, and mapping opportunities created by AI's fast evolution. Introducing innovations in teaching, such as programming instruction and technology skill development, can help tailor learning to individual students' needs (Luckin, Holmes, Griffiths, & Forcier, 2016).

The swift uptake of AI in education has transformed traditional modes of instruction, learning, and assessment worldwide. In Nigerian higher-education contexts, tools like ChatGPT, Grammarly, and Turnitin have become common aids that boost student productivity and improve the quality of submitted work (Bali, 2024). For instance, students use ChatGPT to generate ideas, outline essays, and draft initial versions of papers (Lavidas et al., 2024). Grammarly supports clearer, more correct language use, particularly valuable for non-native speakers, while Turnitin enables students to check originality before submission, helping to prevent accidental plagiarism. Nevertheless, these same tools can be misused: learners may produce polished responses without deeply engaging with the subject matter (Zhai et al., 2024).

Scholars and policy makers have emphasized education's evolving role in society, from knowledge construction to the formation of core job skills and lifelong learning competencies across formal and informal sectors (OECD, 2020). Attention must also be paid to key challenges posed by AI, especially data privacy concerns and the urgent need to prepare teachers to use contemporary educational technologies effectively. Preparing teaching staff for the AI era involves adapting

systems of teacher education and professional development so they address both risks and potential gains. Consequently, rethinking pedagogical methods and curricular content is a vital part of responding to the opportunities and threats presented by AI.

Effective education in the AI age requires an integrated approach that blends technological tools with established teaching practices. When used thoughtfully, AI can foster students' creativity and analytical capacities while also raising important ethical and social questions about technology use. The success of generative systems such as OpenAI's ChatGPT has stimulated scholarly debate about new technological applications in education. For example, at the conference 'Artificial intelligence,' cybersecurity, technological innovations: Challenges for the development of competencies, organized by the Sectoral Councils for IT and for Telecommunications & Cybersecurity, participants discussed how AI might be used to design personalized learning pathways (Majewska-Pyrokosz, 2024).

1.2 Statement of the problem

.As artificial intelligence advances, higher-education institutions must revise their assessment practices to address emerging challenges while preserving rigorous standards of academic integrity (UNESCO, 2023). This urgency is especially acute for Nigerian tertiary institutions, where AI's influence on teaching and learning is expanding rapidly. Developing and implementing new assessment approaches, such as more frequent, low-stakes checks of learning, will help institutions monitor student progress continuously and keep evaluations reliable despite fast-moving technological change (UNESCO, 2023). By applying the strategies discussed in this study, Nigerian universities can harness AI to improve learning outcomes without undermining academic honesty (Abubakar et al., 2024).

Such a proactive stance should give students a fairer measure of their abilities and help preserve the credibility of academic credentials.

AI is now embedded in many students' study routines, supporting assignment work, research, and exam preparation, but these tools also create major challenges for educators trying to ensure assessments accurately represent student learning. The widespread student use of AI for coursework has called into question the dependability of conventional assessment formats (Bittle & El-Gayar, 2025). Because traditional instruments like essays, quizzes, and exams were designed before AI became commonplace, students can sometimes produce sophisticated responses with only superficial understanding. This undermines the extent to which grades reflect genuine knowledge or effort, and forces educators to rethink how to design assessments that remain rigorous, fair, and truly diagnostic of student performance.

Safeguarding academic integrity in Nigerian higher education therefore requires clear innovation in assessment design and practice. The development and adoption of updated strategies, grounded in an understanding of AI's effects, will be essential for maintaining educational standards in the twenty-first century (McDonald, 2025).

1.3 Objective of the study

The following objectives were framed to guide the course of conducting this research:

1. To find out the extent of AI usage among academics in Nigerian universities.

2. To ascertain how academics in Nigerian universities interpret the usage of AI.

3. To determine which academic cadre (senior or junior) demonstrates higher levels of AI usage in Nigerian universities.

1.4 Research questions of the study

1) What is the usage of AI among academics in Nigeria Universities?

2) How do academics in Universities in Nigeria interpret the usage of AI?

3) What stage (senior or junior cadre) of academics show more AI usage?

1.5 Definition of terms

Education: Education is the structured process of facilitating learning, acquiring knowledge, skills, values, beliefs, and habit through training, research, or practical experience.

Tertiary Education: Tertiary education in Nigeria, refers to learning that takes place in universities, polytechnics, and college of education

Artificial Intelligence: (AI) refers to the situation of human intelligence in machines that programmed to think, learn, and perform tasks that typically require human cognition

Cybersecurity: Cybersecurity refers to the practices, technologies, and processes designed to protect computers, networks, software and data from unauthorized access, cyberattacks damage or theft

Technology: Technology refers to the application of scientific knowledge, tools, techniques and systems to solve problems, improve processes, and enhance human activities.

1.6 Scope of the study

This study examines the use of artificial intelligence (AI) technologies in Nigeria's tertiary education sector. Data was drawn for the academics at the University of Benin. Utilizing a qualitative research approach, the study seeks to provide an in-depth understanding of how AI tools are incorporated into teaching, learning, and research activities, capturing the experiences, perceptions, and preferences of academic staff through interviews and observations.

While the primary focus is on the University of Benin, the study also draws on insights applicable to other Nigerian tertiary institutions, including federal and state-owned universities across selected geopolitical zones to ensure contextual representation. The research centers on widely used general-purpose AI tools, such as ChatGPT, Grammarly, and Turnitin, rather than specialized or highly technical AI applications.

The analysis will identify recurring patterns, advantages, challenges, and ethical considerations associated with AI usage in academia. Emerging themes from the qualitative data will inform practical recommendations for improving AI integration into academic practice. Although the study does not address every aspect of AI in education, it highlights the most critical factors necessary for understanding AI adoption and utilization, particularly in enhancing the teaching, learning, and research processes at the University of Benin.

1.7 Significance of the study

The study's findings offer important insight into the emerging role of artificial intelligence (AI) within Nigeria's tertiary education. Evidence from the research indicates that AI can substantially improve students' writing and grammar, assist with academic adjustments, and enhance time-management skills. The study also highlights the necessity for universities to establish clear policies and provide training on AI use so that students can benefit from these tools without becoming overly reliant on them.

By concentrating on university students, a population with distinct needs, this research adds to the growing literature on AI in higher education and supplies actionable recommendations for maximizing AI's support of academic success. More broadly, the work fills gaps in understanding how AI can be deployed most effectively to aid learners. Its conclusions present a practical roadmap for institutions to use AI in ways that uphold academic integrity, encourage critical thinking, and promote independent learning, thereby creating a more inclusive and effective educational environment. Finally, the study's insights can guide the design of AI-informed policies and training programs aimed at improving the educational experiences of Nigerian students

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

AI has seen rapid adoption across higher education sectors, offering significant potential for improving learning outcomes, administrative efficiency and student experiences. AI's ability to personalize learning, automate processes and enhance engagement is a major advantage for students, who often face unique challenges related to academic integration. However, alongside the promise of AI, significant concerns about its ethical use, reliance on technology and impacts on critical thinking are emerging. This literature review critically examines AI's potential in higher education, focusing on its benefits for students while highlighting the challenges that must be addressed for equitable implementation.AI encompasses a broad range of technologies that simulate human intelligence, including machine learning, natural language processing and adaptive algorithms. In educational contexts, AI systems are increasingly applied to facilitate knowledge management, automate administrative tasks and personalize learning experiences. The ability of AI to adapt to individual learning styles and deliver customized content is particularly beneficial for international students, who often struggle with traditional teaching methods that do not account for diverse educational backgrounds or learning preferences.

2.1 Definition and Background of Artificial Intelligence

AI is integrated in the words Artificial and Intelligence; 'artificial' describes something created or manufactured by humans as opposed to existing naturally; it usually serves as a copy or stand-in for something natural. The word originates from the Latin 'artificialis,'which is a compound word

meaning ‘skill’ or ‘craft’ and derived from ‘artificium’ (Harper, 2023). When referring to technological objects, the term ‘artificial’ frequently denotes human-made creations that simulate or reproduce natural processes (Copeland, 2021); on the other hand, ‘intelligence’ is the capacity to learn, comprehend, and use information and abilities (Wang,P.2019). It encompasses a range of cognitive functions, including language comprehension, learning, problem-solving, reasoning, and perception (Russell & Norvig, 2021). There are several ways that intelligence might appear, including:

Analytical intelligence: the capacity for problem-solving, analysis, and evaluation; frequently linked to critical thinking and logical reasoning.

Creative Intelligence: The ability to think creatively, come up with original ideas, and handle problems in fresh ways is known as creative intelligence.

Practical intelligence: this encompasses the capacity to function in a variety of settings, handle daily responsibilities, and comprehend social circumstances.

Emotional intelligence: The capacity to identify, comprehend, and regulate one’s own emotions as well as those of others is known as emotional intelligence, and it’s frequently associated with empathy and social skills.

Intelligence in its sense is broad and varies; another broad but exceptional example of this is the term ‘artificial intelligence,’ which describes software or hardware systems intended to carry out operations that would typically need human intelligence. Rossi (2019) argues that AI is the imitation of human intellect in machines with cognitive, adaptive, and learning capacities comparable to those of humans. These systems can do tasks that often require human intellect, such as speech recognition, visual perception, decision-making, and language translation.

The goal of the scientific field of AI is to create machines that are capable of carrying out a wide range of tasks that call for human intelligence. AI has continuously evolved into influencing stages of transformative processes in different institutions and different fields of study. Cockburn et al. (2018) assert that atomize, a company that uses cutting-edge technology such as neural networks to predict the bioactivity of candidate molecules to uncover possible medication candidates (as well as insecticides). According to the business, its deep convolutional neural network performance 'far surpasses' that of traditional 'docking' techniques. Following the proper training on enormous amounts of data, the business's Atom Net product is said to be able to 'recognize' the fundamental components of organic chemistry and be able to produce extremely precise forecasts of the results of actual physical investigations (Wallach et al., 2015). Suffice it to say here that Atom Wise's technology and that of other companies leveraging on AI to advance drug medical diagnosis or any other field, as seen in the field of media (broadcasting), is doing so at an accelerated speed, which is equally a plus in the world of innovation.

Artificial Intelligence is both a driving force of the fourth educational revolution and a major carrier of the technological progress that is changing societies and economies globally. AI refers to the study of intelligent machines and software that can reason, learn, gather knowledge, communicate, manipulate and perceive objects (Verma, 2018**).** Artificial Intelligence is a part of computer science that deals with the design of intelligent systems; that is, systems that exhibit characteristics associated with intelligence in human behaviors (Ocana et al., 2019). Similarly, Strusani and Houngbonon (2019) define AI as a combined large volume of data with computing power to simulate human intellectual abilities

such as reasoning, language processing, perception, vision recognition and spatial processing.

The academic community has also aligned with the novel advantage of AI, as it has become obvious that AI can drastically alter how researchers collaborate, publish papers, do research, meditate, teach, and learn. As a result, scientists everywhere are becoming increasingly interested in AI due to its immersive benefits. Furthermore, intelligent virtual reality and its use in simulation-based teaching and learning are examples of how AI, according to Pokrivcakova (2019), enables the creation and implementation of intelligent training systems and adaptive content that are tailored to individual-specific instructional requirements and abilities.

2.1.2 **Major Artificial Intelligence Technologies**

According to Thomas and Gambari (2021), the main technologies underpinning Artificial Intelligence (AI) include machine vision, expert systems, machine learning, natural language processing, deep learning, and robotics.

Machine Vision (MV)

Machine Vision, often referred to as computer vision, is a core branch of AI that enables software systems to recognize patterns, make predictions, and apply learned insights to new and previously unseen situations (Richter et al., 2019). It provides machines with the ability to interpret visual information with remarkable speed, precision, and accuracy by using cameras and computer algorithms to perform object recognition, tracking, measurement, and image processing. This technology is widely applied in areas such as automated facial recognition, video surveillance, autonomous driving, medical image analysis, and archaeology (Chen,

2019). In education, machine vision can be employed for automated attendance tracking, monitoring students' facial expressions, and detecting confusion among learners. When integrated with facial recognition systems, it can streamline attendance-taking, saving teachers time and allowing more effective use of class periods.

Expert Systems (ES)

Expert systems represent another major AI technology that simulates the problem-solving capabilities of human experts in specific domains. As noted by Nwigbo and Madhu (2016), expert systems rely on structured knowledge bases to make informed decisions comparable to those of experienced professionals. In the educational context, these systems are incorporated into Intelligent Tutoring Systems (ITS), which provide students with personalized learning experiences tailored to their prior knowledge and abilities. Additionally, AI-driven career advisory systems powered by expert systems can offer individualized academic and career guidance, aligning students' skills, experiences, and aspirations with educational and professional pathways (Khare et al., 2018).

Natural Language Processing (NLP)

Natural Language Processing (NLP) focuses on enabling machines to understand, interpret, and generate human language in both spoken and written forms. This AI technology allows users to interact with intelligent systems using natural languages such as English, French, Swahili, or Chinese. NLP applications are found in tools such as talking calculators that provide spoken outputs, and in services like Google Translate and chatbots, which facilitate multilingual communication (Kolodny, 2017). NLP assists learners by offering grammar and

spelling corrections, automated translation, and accessibility features for individuals with visual, auditory, or motor impairments, thereby promoting inclusive learning environments.

Machine Learning (ML)

Machine Learning, considered one of the most advanced branches of AI, involves designing, training, and deploying algorithms capable of learning from data to make predictions or decisions (Goksel & Bozkurt, 2019). It uses existing datasets to forecast future outcomes and improve system performance over time. In education, machine learning assists educators in grading assignments, detecting plagiarism, and monitoring student progress. It is also integrated with NLP to support applications such as text-to-speech and real-time translation tools. Moreover, ML algorithms personalize content delivery by recommending suitable learning materials, enabling adaptive learning experiences for individual students.

Deep Learning (DL)

Deep Learning, a subset of machine learning, utilizes deep neural networks to perform pattern recognition and classification tasks on large datasets (Chen, 2019). It is instrumental in technologies such as virtual assistants, which recognize and interpret human speech, images, and sounds. Within education, deep learning enhances personalized online learning by supporting adaptive educational platforms that adjust to each learner's needs, thereby improving engagement and academic outcomes.

Robotics

Robotics is the field of AI concerned with designing, constructing, and operating robots capable of performing diverse physical and cognitive tasks. The Robot Institute of America (1979, as cited in Odoh, 2018) defines a robot as a reprogrammable, multifunctional manipulator designed to perform various operations automatically. Robots are equipped with sensory capabilities that mimic human perception, enabling them to interact intelligently with their surroundings. In education, robots can be used to deliver synchronous lessons to students who are unable to attend school physically. For example, Avatarion, a Swiss company, has developed robots linked to the Microsoft Azure IoT Hub that allow hospitalized or homebound students to participate in real-time classroom activities through video and audio connections (Mamudu & Lamido, 2017).

Artificial Intelligence holds immense potential to address critical challenges in modern education, revolutionize teaching practices, and support progress toward Sustainable Development Goal 4 (SDG 4), quality education for all (UNESCO, 2023). By analyzing student performance data, AI can assist educators in creating customized lesson plans and assessments tailored to individual strengths and weaknesses. This personalization enhances student engagement, motivation, and ultimately, academic success.

2.1.3 Artificial Intelligence in Education

Artificial Intelligence has penetrated and influenced growth in education through the invention of educational applications, web searches and several learning platforms with several functions they can perform. Below are examples of AI in education categorized under these branches as outlined by Olafare (2023):

Expert System

Educational artificial intelligence (AI) systems that operate as expert systems simulate human expertise to enhance learning and professional tasks. Example includes;

First, ChatGPT, developed by OpenAI, is based on the GPT-3 language model and refined through both supervised and reinforcement learning. It produces human-like text and supports learners with writing, tutoring, and problem-solving assistance (Floridi & Chiriatti, 2020). Another example is Teal, a digital career management tool that enables job seekers to organize and monitor their applications effectively, functioning much like a personal applicant tracking system (Hernandez, 2022).

In addition, Calendly automates meeting scheduling, minimizing back-and-forth communication and improving productivity for students and educators alike (Lopez, 2023). Lastly, ResyMatch uses AI to optimize résumés by comparing them to job descriptions and identifying keyword matches to increase interview opportunities (Nguyen, 2021).

Machine Vision

Machine vision systems rely on AI to analyze, recognize, and interpret images for educational purposes. Examples includes;

First, facial recognition technologies are used within schools to automate attendance, strengthen security, and even monitor classroom engagement (Zhao et al., 2020; Wang, Li, & Zhao, 2020).

Another example is Gradescope, an AI-supported grading platform that uses image recognition to evaluate handwritten or scanned assignments accurately, saving educators time while maintaining fair assessment practices.

Natural Language Processing (NLP)

Natural Language Processing enables machines to comprehend, process, and generate human language, fostering better communication and learning experiences. Examples includes;

First, Microsoft's Presentation Translator allows users to add live subtitles in PowerPoint presentations, offering accessibility for multilingual audiences and those with hearing impairments (Garcia & Patel, 2022). Another example is Grammarly, an AI writing assistant that detects grammatical mistakes, provides stylistic recommendations, and helps refine writing to fit specific audiences or contexts (Johnson, 2021).

In addition, Twitter Bots apply NLP to automate online engagement such as tweeting and responding to messages, helping educational institutions distribute information efficiently (Clark, 2020; Anderson, 2020). Lastly, Speeko functions as a speech coaching tool powered by AI, offering real-time feedback on tone, pacing, and articulation to improve users' public speaking and communication abilities (Martinez, 2022).

Robotics

AI-powered robotics tools play an important role in making learning environments more interactive and participatory. Example includes;

First, Padlet is a collaborative online platform that enables teachers and students to exchange text, visuals, and videos in real time, encouraging engagement and teamwork (Brown, 2021). Another example is the use of smart boards in classrooms. These interactive touch-screen devices combine digital and physical elements, allowing learners to engage with content directly and fostering active learning (Smith et al., 2019; Miller & Davis, 2019).

Machine Learning

Machine Learning (ML) systems improve educational processes by analyzing data and adapting over time. Examples are;

First, Turnitin applies ML algorithms to detect plagiarism by comparing students' submissions with a vast database of online sources. It also provides feedback to guide students toward better writing and ethical academic practices (Walker & White, 2021). Another example is ResearchGate, a social networking platform for researchers that uses AI to recommend relevant publications and potential collaborators (Baker, 2022).

Moreover, Scopus employs ML to analyze and organize research data, track citations, and assist users in identifying influential studies and experts (Singh & Rao, 2020). In addition, Gooru acts as a personalized 'GPS for learning,' applying AI to assess learners' progress and tailor educational content based on their needs (Patel, 2023). Lastly, Web of Science integrates AI-based analytics to measure research influence, allowing educators and students to access credible academic information across multiple disciplines (Harrison, 2022).

2.1.4 Artificial Intelligence Literacy in Education

Our lives have experienced significant transformations due to the advent of artificial intelligence technology. As an increasing number of smart devices and applications are integrated with AI, understanding the concept of AI literacy becomes imperative, as it encapsulates individuals' competencies in utilizing AI technology. As defined by experts, AI literacy encompasses a set of knowledge and skills that empower non-experts to comprehend, critically evaluate, and effectively employ AI technology across various contexts. According to Laupichler et al. (2023) with Long and Margeko (2020), AI literacy involves a foundational understanding and the ability to assess AI technology and utilize and interact with AI applications in diverse environments, including home and workplace settings. Additionally, Lérias et al. (2024) expanded this concept by highlighting the importance of skills in applying and using AI in daily life. Wang et al. (2022) further defined AI literacy as the capacity to master the applications of AI technology, select and critically evaluate information generated by AI, and maintain an awareness of ethical and social responsibilities when engaging with this technology.

Gary et al. define the scope of AI literacy as AI Concepts, AI Applications, and AI Ethics and Safety, where AI Concepts refers to understanding basic AI concepts and their origins.AI applications mean to appreciate the practical applications of AI concepts.AI ethics means to be able to describe the ethical challenges and safety issues faced when applying AI technologies in the real world. Wong et al. specifically defined AI literacy in K-12 education. AI literacy is the ability to solve problems effectively and ethically in a variety of socio-cultural contexts

with the use of AI tools, systems, and frameworks to and thus the ability to readily interact with AI.

The ‘New Curriculum Standards’ aimed that through the learning of this module, students can recognize and feel the charm of AI, know the ethical and moral norms that must be followed in the development of AI, and recognize the new opportunities and challenges under the new social form of the smart society.

AI literacy among higher education students, as the next generation, must be prioritized in every country. This emphasis is warranted because today’s students will encounter numerous challenges in an increasingly technology-driven workforce (Hwang et al., 2023), including the necessity to master new skills and adapt to rapid changes. AI literacy empowers students to contribute to technological innovation, act as agents of change, and effectively address complex problems across various domains (Pinski & Benlian, 2024). Furthermore, AI literacy enables students to comprehend the ethical and social implications associated with AI utilization, fostering the development of responsible and sustainable technologies (Ng et al., 2021a; Zhang et al., 2023). Consequently, mastering AI literacy is essential for students navigating an increasingly digital and technology-driven future.

AI literacy help students master the necessary character and key abilities to adapt to the intelligent society, and junior high school students do not need to have a very in-depth grasp of the underlying technical principles of AI. It is a comprehensive and up-to-date cognitive system and skills, and a comprehensive literacy integrating effectivity, knowledge, skills, and ethics.

2.1.5 Measurement of Artificial Intelligence in Education

Artificial intelligence encompasses a wide variety of systems, each with distinct functions and capabilities. Examples include:

Firstly, machine learning algorithms are trained to label data, make predictions, and analyze patterns over time. Another example is chatbots, which are designed to simulate human conversation. In addition, natural language processing (NLP) systems, such as IBM Watson [Ferrucci, 2012], enable computers to process and understand human language. Similarly, cognitive systems, also exemplified by IBM Watson [Ferrucci et al., 2010], demonstrate reasoning and learning abilities. Moreover, game-playing AI, like the deep Q-network capable of playing ATARI video games [Mnih et al., 2015], showcases reinforcement learning in action.

Furthermore, computational models of the brain aim to replicate neural processes. Likewise, models of consciousness, such as the Global Neuronal Workspace implemented in LeCun's "consciousness prior" framework [LeCun, 2022], explore awareness and self-reflection in AI. Additionally, Artificial General Intelligence (AGI), including attempts like OpenAI's GPT-4 and research on scalable reasoning and alignment [OpenAI, 2023], represents efforts toward human-like intelligence. Lastly, autonomous vehicles, or self-driving cars, use AI to perceive their environment and make decisions independently.

These systems demonstrate expertise in specialized areas and operate within highly constrained environments. However, none of them are capable of understanding or passing intelligence tests designed for humans or animals. While AI could easily be programmed to outperform humans on traditional IQ tests, this

raises the question: what kind of intelligence do these artificial systems actually share, and how can it be measured?

One method to evaluate AI is the Turing Test, which benchmarks machines against human intelligence by assessing how closely they replicate human performance. A limitation of this approach is that as AI continues to advance, it may master all human-level tasks, rendering some challenges trivial, similar to how humans perceive simple games like Tic Tac Toe. To rank AI effectively, we need tasks that are sufficiently challenging and allow for gradations of performance. If all AI systems fully solve a task that is difficult for humans, the most we can conclude is that they exhibit superhuman intelligence in that specific domain.

A deeper issue with Turing testing is that it cannot assess forms of intelligence that are non-human. For instance, computers excel at processing vast datasets and may demonstrate superior intelligence in fields like bioinformatics, yet fail at tasks such as Raven's Progressive Matrices. Judging intelligence solely by human capabilities would be overly anthropocentric.

These limitations suggest that Turing tests are mainly useful for evaluating AI systems intended to mimic human intelligence without exceeding it significantly. They are less suitable for assessing AI that surpasses human intelligence or functions in entirely different domains.

2.2 Artificial Intelligence in Teaching and Learning

The role of generative AI (G-AI) in contemporary education is increasingly significant, as educators worldwide have discovered its usefulness in generating lesson plans, designing assessments, grading, creating examination questions,

developing interactive tutorials, and conducting preliminary research. However, the adoption of such tools varies across regions. Lecturers in developed countries have generally embraced ChatGPT and other generative AI tools in their official duties (Baidoo-Anu & Owusu Ansah, 2023), whereas many educators in Africa remain hesitant. In Nigeria and other African countries, there is widespread concern that G-AI may promote intellectual laziness, encourage academic dishonesty, and threaten the professional relevance of teachers (Bakare, 2023). Consequently, official positions on the use of generative AI in educational settings are rare.

In contrast, educators in Western countries have adopted a proactive approach to address the challenges posed by generative AI. While some U.S. school districts have recently imposed bans on G-AI tools (NBC, 2023), most universities in the United States and the United Kingdom have acknowledged the pervasive influence of these technologies and are implementing strategies to manage their impact. Many lecturers now incorporate generative AI in research and teaching, recognizing the importance of understanding how these tools function in order to guide students effectively, highlighting both their advantages and limitations (Cooper, 2023; Mhlanga, 2023).

Several institutions have established programs to equip both educators and students with the necessary skills to use generative AI effectively. These programs often include training on AI content detection tools such as Originality.ai, GPTZero, Sapling, Copyleaks, OpenAI Text Classifier, CrossPlag AI, and AISEO, which help verify the authenticity and originality of digital content. Such training, often provided through university libraries, is now a key component of digital literacy education, enabling students and educators to stay current with

technological developments or at least maintain pace with them (Teal, 2023; Bakare, 2023).

Many universities have also introduced policies requiring students and educators to disclose AI-generated content, fostering accountability and addressing ethical considerations. Additionally, some institutions provide caveat statements for educators to communicate the limitations and responsible use of G-AI tools to students (Boston University, 2023). These measures exemplify the approach that should be adopted by educators in the Global South, emphasizing that when effectively integrated into academic practice, generative AI can enhance pedagogical engagement and strengthen traditional educational systems (Bakare & Okuonghae, 2023).

Even top-tier universities in the United States acknowledge the ongoing uncertainty surrounding the role of generative AI, opting for caution by allowing teachers to guide students on ethical and responsible use while emphasizing university-issued caveats. Ethical considerations remain a central concern (Boston University, 2023), alongside challenges such as quality control, reliability of information sources, diminished human agency in knowledge creation, technical complexity, potential teacher replacement, overreliance on technology, and reduced opportunities for creativity and critical thinking (Bozkurt, 2023). These issues are central to discussions about the integration of generative AI among educators and learners.

2.3 Educational Possibilities of Artificial Intelligence

The education sector can certainly benefit from the use of artificial intelligence. However, already at a very early stage of implementing innovative solutions, it is

necessary to consider the educational environment's specificity, especially considering this system's mission (Fazlagić, 2022). Artificial intelligence (AI) is a key future technology, according to the European Parliament in 2020. In the context of the development of AI in Poland, the Committee of the Council of Ministers for Digitalization (KRMC) adopted the 'Artificial Intelligence Development Policy in Poland' in 2020, which sets specific goals and actions for the short, medium and long term. One of the important areas of this policy is education, covering a wide range of activities from primary schools to universities, including training programs for people at risk of losing their jobs due to the ongoing development of technology. It is worth noting that the document mainly focuses on the role of education as a tool for shaping human capital in the context of the economy but does not provide specific guidance on the potential applications of AI in the education system. The IBE report 'Artificial Intelligence (AI) as a megatrend shaping education'(2022) focuses on the analysis of the connections between the field of education and the dynamic development of artificial intelligence. The document identifies current and future trends and presents how society can be prepared for the opportunities and challenges related to technological progress. It emphasizes the key role of digital competencies in developing artificial intelligence. The report provides a comprehensive look at how education can adapt to the changing digital landscape while providing society with the tools to use the potential of artificial intelligence effectively.

Table 2.1 presents an overview of the possibilities of using artificial intelligence in education.

There are several subcategories among the applications of artificial intelligence in education. Artificial intelligence supports the learning process by enhancing

student engagement, providing personalized learning experiences, and facilitating adaptive assessments. It also serves as a valuable tool for teachers, offering support in administrative processes such as grading, scheduling, and tracking student performance. In addition, artificial intelligence plays a significant role in managing the education system at various levels, assisting in decision-making, data analysis, and the efficient allocation of resources to improve overall institutional performance.

Table 2.1

Overview of the possibilities of using artificial intelligence in Education.

Application	**Description**
Artificial intelligence supports the learning process	
Artificial intelligence as a teacher's assistant	Artificial intelligence can function as a tutor or teaching assistant. At present, AI is most effective in delivering fundamental knowledge within particular subject areas but is limited in fostering higher-order cognitive skills such as creativity, critical thinking, and integrative reasoning. However, it is possible that future developments in AI-driven education systems could enhance their capacity to cultivate such complex skills. When evaluating the credibility of educational experiments, it is important to consider the

	influence of confirmation bias—the tendency of researchers to unintentionally design studies that validate their expectations. In social research, reliability is usually ensured by replicating experiments multiple times, a practice that teachers rarely adopt. Since AI systems are inherently free from the cognitive biases and emotional errors that often affect human judgment, they could hold a potential advantage over human instructors by maintaining greater objectivity and consistency in educational contexts.
Artificial intelligence as a teacher's replacement	Current technologies already facilitate adaptive learning—intelligent tutoring platforms (e.g., Carnegie Learning). These encompass voice-enabled assistants such as Amazon's Alexa, Apple's Siri, and Microsoft's Cortana. Voice assistants permit students to review and discuss learned material independently, without teacher involvement. Universities also leverage these assistants to supply administrative and logistical details to learners. For example,

	Arizona State University's collaboration with Cognilytica provides first-year students with an orientation program delivered via Amazon Alexa.
Artificial intelligence as a space ensuring emotional safety in the process of suffering educational failures	Learning is deeply tied to experimentation and setbacks along the way. In conventional classrooms, numerous social and emotional obstacles deter students from attempting tasks, often due to the fear of public embarrassment. Consequently, this anxiety undermines the effectiveness of learning. Thus, the ability to rehearse skills privately and the nonjudgmental, personal interaction offered by artificial intelligence can provide a significant advantage over classroom practice or direct teacher supervision.
Application to the individual needs of the student (personalization)	The educational and developmental framework in conventional schools is inherently geared toward uniformity and standardization of instruction. In contrast, artificial intelligence enables tailored learning experiences. This customization should focus chiefly on addressing identified gaps in knowledge, which a

	teacher in a standard classroom might overlook to accommodate the broader group's requirements. For instance, AI can intensify practice questions in weak areas while minimizing them in subjects already mastered. As a result, overall testing duration remains consistent across a class, yet the composition of assessments differs per student. This method previously accelerated the shift from agrarian to industrial economies in leading nations, with others worldwide adopting similar strategies.
Giving feedback	Classroom teachers frequently lack sufficient time to deliver individualized feedback on students' progress, knowledge gaps, or skill deficiencies. Artificial intelligence can address this shortfall. By analyzing identified weaknesses and drawing from a comprehensive feedback repository, AI can produce tailored, consistent, and detailed evaluations for each learner. An added benefit is the elimination of perceived bias—students cannot claim "the teacher dislikes me" for a poor grade.

	When interacting regularly with AI, students generate historical performance data that the system can use to guide decisions about future educational pathways. A distinct concern is the integrity of feedback. An AI algorithm can be designed to remain impartial and truthful, unlike human teachers who may sometimes withhold candor or act unfairly. Though ethically questionable, such human lapses inadvertently prepare youth for real-world inequities and deception. In theory, AI could simulate injustice by programming occasional bias, racism, or discrimination against specific students—but this would raise far graver ethical dilemmas than any teacher's misconduct.
Artificial intelligence as teacher support in administrative processes	
Assessing students	Artificial intelligence can alleviate teachers' workload in evaluation by fully automating grading (e.g., test-based assessments) or offering partial support—such as analyzing student outputs and recommending scores while preserving the teacher's final

	authority. Future advancements may enable sophisticated qualitative evaluation of student work. AI can also handle ancillary duties, including semester-end grade entry, administrative reports, lesson material preparation, school trip coordination, parent communication, support for international students, sick-leave management, and more. Teachers devote considerable time to non-instructional tasks, so offloading these responsibilities could enhance educational quality if the reclaimed hours are redirected toward teaching or rest. Administrative overload also erodes motivation and contributes to burnout. Additionally, AI can prioritize and recommend which students require teacher attention and for what reasons.
Checking student attendance and activity	This is one of the simplest tasks that simple software can perform.
Methodological support	Artificial intelligence can play a supportive role in the teaching process. For instance, if an AI system identifies an unusually high number of incorrect student responses

	within a specific topic, it can alert the teacher and suggest instructional adjustments or recommend additional content to address learning gaps. At present, the responsibilities of methodological advisors—who provide pedagogical guidance and support—are assigned to teachers by the education superintendent, typically in consultation with the principal of the institution where the teacher works. In the future, AI systems could potentially assume many of these advisory functions, offering data-driven insights and personalized recommendations that help teachers refine their instructional strategies and improve overall teaching effectiveness.
Relationship management	Teachers are obliged to maintain ongoing relationships with parents. AI could replace teachers with related tasks, especially if AI allows for direct feedback about the student to parents without involving the teacher.
Artificial intelligence in the area of managing the education system at its various levels	

Teacher evaluation	Education systems across the world have established various frameworks for evaluating teachers and determining their professional advancement. These systems typically rely on the assessment of predefined criteria, such as specific accomplishments and professional activities. Similar to student evaluation, artificial intelligence could play a role in assessing teachers or supplying evaluators with data-driven insights. By integrating algorithms that connect information about students' academic progress (educational value added) with analyses of teacher engagement, school performance, collaboration with colleagues, and involvement with the local community, AI could generate objective and periodic teacher evaluations. Such a system would reduce the influence of personal bias or political considerations that sometimes affect teacher assessments. Consequently, implementing AI to make teacher evaluations more objective could

	enhance the overall quality of education by ensuring that professional advancement and recognition are based on measurable performance indicators rather than subjective or external factors.
Big data analysis about the education system	Advanced algorithms leveraging data from student interactions can deliver insights to optimize resource distribution in education, forecast trends, and preempt risks—such as those arising during pandemics or remote learning. With this information, the Ministry of Education and Science could quantify potential learning losses due to diminished instructional quality in crisis periods. Macro-level educational research has long been conducted, including by the OECD's CERI center. AI integration could dramatically enhance the precision, scope, and frequency of such analyses. Moreover, it would eliminate reliance on subjective teacher surveys. AI could also resolve numerous politically charged questions in Poland and

	globally—for instance, whether raising or lowering the compulsory preschool age positively or negatively affects a child's emotional and cognitive development.
Data analysis at the managing body and regional level	Examining regional variations across large local authorities (e.g., urban municipalities) could enable more efficient resource allocation and better oversight of their utilization. For instance, AI algorithms could correlate student and teacher engagement data with expenditures on educational information technology.

Source: Fazlagić (2023).

2.4 Impact of Artificial Intelligence on Higher Education

The impact of AI on higher education has witnessed substantial growth in recent years, as highlighted by notable studies (Al-Zahrani, 2023; Al-Zahrani, 2024a; Bozkurt et al. 2021; Chu et al. 2022; Dai and Ke, 2022; Laupichler et al. 2022; Zawacki-Richter et al. 2019). Scholars from diverse fields, including education, computer science, psychology, and ethics, have explored various facets of AI implementation in higher education settings. They include;

Assessment and Grading: AI plays a key role in automating assessment and grading, drawing significant scholarly attention. Researchers examine the reliability and validity of AI-driven grading systems by comparing them to conventional human evaluation, while weighing their advantages and drawbacks

(Zawacki-Richter et al., 2019). Leveraging technologies such as Natural Language Processing (NLP) and plagiarism detection, AI streamlines grading tasks, lightens educator workloads, and supports data-informed decision-making.Despite these promising benefits, careful consideration of AI's real-world implementation and its effects on student performance remains essential (Holmes et al., 2021).

Educators' Professional Development: As AI becomes more embedded in educational settings, prioritizing the resolution of teachers' concerns and their professional training is essential. Schools, policymakers, and AI creators should partner to mitigate challenges associated with AI adoption, while delivering the required resources and skill-building opportunities for instructors to adeptly incorporate AI into their pedagogical approaches (Luckin et al., 2016). A practical illustration involves leveraging machine learning to process student evaluations, thereby boosting teachers' ongoing professional development .

Learning Analytics and Student Support: AI's innovative impact in education shines through learning analytics and student support systems. There is a growing trend toward harnessing student data and analytics to enrich the learning experience and boost academic outcomes (Ifenthaler & Yau, 2020). By processing massive datasets in real time, including insights into students' emotions, AI empowers educators to detect at-risk learners, deliver tailored interventions, and provide immediate feedback and evaluation (Chassignol et al., 2018).

Ethical and Social Implications: The ethical and societal implications of AI in higher education demand urgent attention. As AI evolves, it raises complex ethical dilemmas that require deeper investigation into its social consequences, such as

accountability in AI-driven processes and its effects on teacher-student dynamics (Williamson & Eynon, 2020). Key concerns include responsibly deploying AI, promoting equity and inclusivity, and preserving the essential role of human educators alongside automated tools (Popenici & Kerr, 2017). Additionally, AI's broader societal impact, including shifts in employment landscapes and workforce transformation, must be carefully evaluated. Integrating AI into daily life necessitates rigorous ethical scrutiny, particularly regarding its influence on human well-being and societal structures (Baker & Smith, 2019).

2.5 Roles of Artificial Intelligence in Education

AI has penetrated education spheres, in the form of intelligent books, web browsers, education apps, and learning platforms (Karsenti, 2019). AI has also enabled new ways of learning, teaching, assessment and research, thus increased the efficiency of educational activities and gave access to a wide range of information**.**

Teaching prospects : AI will give flexibility to teachers in Nigerian educational institutions. Depending on the specific technology, using AI could reduce the burden of attending classrooms, marking papers and other tasks, enhancing the overall teaching experience and quality (Furze, 2024). The use of AI could assist teachers in identifying the learning needs and abilities of individual students and developing appropriate measures to respond to such needs (Xia et al., 2024). Also, teacher-facing AI systems are used to support the teacher and reduce workload by automating tasks such as administration, assessment, feedback, and plagiarism detection .AI could also provide additional support for teachers in analyzing students' data, predicting their academic achievements, and proffering solutions to address their learning challenges. Importantly, AI helps educators gain greater

insight into how students are progressing. That means they could adjust their approach, supporting students' individual needs (APA, 2025). Furthermore, AI could foster the development of smart content and platforms for the professional development of teachers. Peers and mentors may emerge from such communities, invariably boosting teaching experience and quality, including AI mentors for learners and further development educators through virtual global conferences.

Simplifying Administrative Tasks : Artificial intelligence (AI) is capable of handling various administrative responsibilities within schools and universities (Ajuwon, Animashaun, & Chiekezie, 2024). Teachers often dedicate a large portion of their time to marking exams, evaluating assignments, and giving students meaningful feedback. With the help of technology, these grading processes, especially for standardized or multiple-choice tests, can be automated (Furze, 2024). This automation provides teachers with additional time to focus on direct student interaction rather than routine grading duties. Moreover, AI applications are transforming administrative operations such as school admissions by simplifying document sorting, classification, and processing.

Smart Content : Artificial intelligence (AI) is increasingly intertwined with education, providing innovative methods that support students in achieving their highest academic potential (Zawacki-Richter et al., 2019). The development of smart content has become a major focus in modern education, as AI-powered systems are capable of generating high-quality digital materials similar to those produced by professional writing platforms (Ajuwon, Animashaun, & Chiekezie, 2024). This technology is now prevalent in classrooms and extends to interactive tools such as virtual lessons, video lectures, and real-time conferencing. Furthermore, AI applications are transforming traditional syllabuses by generating

personalized digital textbooks and interactive learning resources tailored to individual learners. Consequently, education is witnessing a shift toward digitized content and adaptive learning environments suitable for students across different academic levels (Chen et al., 2020).

Personalized Learning: AI-based educational applications enable learners to receive personalized feedback and guidance from their instructors (Luckin et al., 2016). These tools help teachers simplify and organize lessons into digital study aids such as flashcards and concise learning summaries. In addition, AI supports differentiated instruction by allowing educators to adapt teaching methods to students' specific academic challenges (Holmes et al., 2021). Compared to earlier times, university students now have increased opportunities for communication and collaboration with their teachers through AI-enhanced platforms (Zawacki-Richter et al., 2019).

Global Learning : Education is boundless, and artificial intelligence (AI) plays a vital role in removing geographical and accessibility barriers to learning (UNESCO, 2022). Through modern technology, learners can study virtually any subject from any location and at any time. AI-driven education systems also enhance students' digital literacy and IT competencies (Luckin et al., 2016). As innovations continue to evolve, more academic programs will become available online, enabling students to pursue education remotely and flexibly through AI-supported platforms.

New Efficiencies : Artificial intelligence (AI) enhances information technology processes and drives greater operational efficiency in educational environments (Nguyen et al., 2023). It helps schools implement effective strategies to manage

student movement and safety, such as minimizing crowd congestion in hallways. Additionally, AI tools can analyze and model complex datasets, supporting the operations department in making accurate, data-driven predictions (Chen et al., 2020). These insights promote better institutional planning, such as assigning seating during school events or managing cafeteria food orders. Consequently, AI minimizes resource wastage and prevents unnecessary expenses, contributing to cost-effective school management (UNESCO, 2022).

2.6 Ethical Considerations and Challenges of Artificial Intelligence in Higher Education

Integrating AI technologies in education presents significant ethical considerations, particularly regarding academic integrity. A major challenge is ensuring that students use AI tools ethically rather than relying on them to complete assignments or exams dishonestly. As Elkhatat et al. (2023) highlighted, AI-generated content can blur the line between original thought and machine-assisted output, making distinguishing genuine student effort from AI-driven generated content difficult. This raises concerns about the fairness of assessments and whether students are being evaluated on their abilities or the capabilities of the AI tools they use. To address this issue, institutions must promote academic honesty and establish clear guidelines on responsible AI use.

Data privacy is a critical ethical concern in integrating AI tools into education, as these tools require large amounts of data, including personal information from students, which, if not properly managed, can expose institutions to privacy risks (Ogunode et al., 2024). Collection misuse of sensitive information (Longpre et al., 2024). To mitigate these risks, Nigerian tertiary

institutions should ensure that the AI tools adopted comply with data protection regulations and prioritize student privacy. Implementing best practices in data management, such as data minimization and collecting only the essential data, limits the risk of excessive data storage.

Additionally, encryption practices protect sensitive information by converting it into secure code, preventing unauthorized access (Smith & Brown, 2020). Regular data audits, which review stored data and access protocols, ensure compliance and security. Employing Multifactor Authentication (MFA) for systems containing sensitive data further strengthens privacy by requiring additional identity verification for access (Ogbanufe & Baham, 2023). Clear data retention policies, with timelines for secure data deletion, reduce unnecessary exposure risks. Privacy education for students and staff fosters awareness and responsible data management, promoting a robust institutional culture of privacy. The ethical challenge of equity in AI access and use must also be addressed. Not all students have equal access to AI tools or the technological infrastructure required to benefit from them entirely. Okoye et al. (2023) argue that this disparity could exacerbate existing educational inequalities, where students from disadvantaged backgrounds may struggle to compete with peers with greater access to AI resources. Institutions must consider policies ensuring equitable access to AI technologies and providing all students with the tools and training necessary to participate in AI-integrated learning environments. This could include offering technology grants or subsidized access to AI tools for underprivileged students.

Another area for improvement is the challenge of over-reliance on AI, which may diminish students' critical thinking and problem-solving skills. Calzada (2024) points out that while AI can assist with specific academic tasks, overdependence

on these tools could undermine students' intellectual development by discouraging independent thought and creativity. Educators and institutions must strike a balance by designing assessments that challenge students to think critically and solve problems without AI assistance. This balance can foster deeper learning while ensuring that AI complements rather than replaces human intellectual engagement in education.

2.7 Empirical Studies

Tertiary institutions globally are adopting AI tools to enhance teaching, learning, administration, and research. This literature review synthesizes empirical studies on the use of AI in tertiary institutions, focusing on its pedagogical applications, institutional impact, challenges, and student and staff perceptions. Several empirical studies have explored how AI enhances instructional K8delivery. Kose et al. (2021) conducted a quasi-experimental study on the use of adaptive learning management systems powered by AI. The findings demonstrated improved student engagement, performance, and personalized learning pathways.

Similarly, Holstein et al. (2019) explored how intelligent tutoring systems (ITS) like Carnegie Learning impacted classroom interaction. The results showed that AI tools augmented teacher instruction and offered individualized feedback in real time. In language learning contexts, AI-powered applications like Duolingo or Grammarly have been empirically shown to aid vocabulary acquisition and writing fluency (Godwin-Jones, 2022). Such tools support autonomous learning by giving students immediate feedback and suggestions.

With the advent of large language models (LLMs), especially OpenAIs ChatGPT, studies have emerged examining their use in academic writing. Heil et al. (2023)

conducted surveys and interviews with students and staff across multiple U.S. institutions and found that students use ChatGPT for brainstorming, summarization, and coding assistance. However, concerns were raised about academic dishonesty and overreliance.

In the Global South, Olumide and Adebayo (2023) studied Nigerian university students and found a rising reliance on ChatGPT for essay writing and research project guidance. The study emphasized both the potential for democratizing access to academic support and the risks of undermining academic integrity.

AI-based automated grading systems and feedback tools have gained popularity, especially in online education. Empirical studies by Bessenyei et al. (2020) found that AI-generated feedback improved student satisfaction and learning outcomes in MOOCs (Massive Open Online Courses). However, the accuracy and contextual relevance of such feedback remain contentious.

Moreover, AI systems like Turnitin, which detect text similarity and potential plagiarism, are widely used in tertiary institutions. Sutherland-Smith (2021) explored staff and student perceptions of Turnitin and found that while many valued its role in academic integrity, others saw it as punitive rather than educational.

AIs application extends to administrative decision-making and predictive analytics. Institutions in countries like the U.S. and the UK have adopted AI to monitor student performance, predict dropout rates, and allocate resources efficiently. For instance, Siemens and Long (2011) highlighted early implementations of learning analytics systems that use AI to detect at-risk students and suggest timely interventions.

However, studies have also raised ethical concerns. Williamson and Eynon (2020) questioned the opacity of AI algorithms used in decision-making and emphasized the need for transparency and ethical oversight.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter describes the research methods used to examine artificial intelligence and its usage in tertiary institution. Along with the qualitative strategy picked and constructivist philosophical position, the research design's compatibility with the study's goals is explored. There are specifics about participant choice, data collection techniques, and the thematic analysis procedure. Additionally, the ethical principles governing the study are discussed, laying the groundwork for a thorough investigation of the research topic.

3.1 The Research Questions

1) What is the usage of AI among academics in Nigeria Universities?

2) How do academics in Universities in Nigeria interpret the usage of AI?

3) What stage (senior or junior cadre) of academics show more AI usage?

3.2 Research Method

Qualitative research was conducted for this study. In contrast to quantitative research, which aims to categorize aspects, quantify them, and build statistical models, qualitative research aims to give a thorough and in-depth account. Collins & Hussey (2003) state that its fundamental advantage, which also serves as its fundamental distinction from quantitative research, is that it provides a thorough description and analysis of the research issue without restricting the scope of the study or the form of participants' responses.

For the purpose of answering the research questions, the qualitative approach incorporating thematic analysis was undertaken. The thematic analysis was

carried out with the aim of exploring the practices of what is the usage of AI among academics in Nigeria Universities (RQ1), How does academics in Universities in Nigeria interpret the usage of AI (RQ2), and what stage (senior or junior cadre) of academics show more AI usage (RQ3). The 'how' and 'why' research questions are addressed by the qualitative research method, which also allows for a deeper comprehension of phenomena and context. It makes it easier to pose queries that can't be effectively answered by numbers.

3.3 Sample Selection

The sample for this study was deliberately chosen through a non-probability sampling technique known as purposive sampling. This approach was adopted to enhance the depth and richness of the data collected. It enabled the researcher to intentionally select individuals who possessed relevant knowledge and experience related to the research topic. Because the study aimed to assess the use of artificial intelligence among academics in Nigerian tertiary institutions, it was essential to include participants who had direct experience with AI applications within higher education settings.

In this regard, lecturers from the University of Benin were selected as participants. Their inclusion was based on their professional expertise and their ability to contribute diverse perspectives to the study. The participants represented a mix of ages, genders, and academic experience levels, ensuring a well-rounded understanding of AI usage within tertiary institutions. This diversity was intended to provide a comprehensive overview of the phenomenon and enhance the relevance and applicability of the study's findings to a broader academic context.

3.4 Data Collection Method and Tools

A qualitative approach using in-depth interviews was employed as the principal data-collection method. In-depth interviews are typically intimate and flexible, designed to explore participants' feelings, perceptions, and views on a topic through open-ended dialogue (Kumar, 2005). Semi-structured interviews were used: an interview guide with open questions provided structure while allowing respondents to expand on issues in their own terms, and the guide was piloted (reviewed/tested) beforehand to ensure clarity and relevance. Piloting and careful planning of the interview protocol help improve question wording and the overall suitability of the schedule for eliciting rich data.

To capture responses accurately, all interviews were audio-recorded and an interview guide was used to keep the discussion aligned with the study's aims. Audio recording is a common and recommended practice in qualitative research because it preserves participants' exact words for reliable transcription and analysis. Transcripts were produced from the recordings and used as the basis for detailed analysis.

Using a semi-structured format offered both consistency across interviews and the flexibility to probe emerging themes; this balance is particularly useful when investigating complex or sensitive issues and when the researcher needs to follow unexpected but relevant lines of inquiry. The recorded data and transcripts were then employed to support systematic coding and thematic analysis aligned with the study objectives.

3.5 Data Collection Process

The interview process was conducted over a two-week period and involved a total of 12 participants. Initially, participant information statements (see appendix II) were distributed to 17 lecturers; however, only 12 responded and reached out to the researcher to confirm their willingness to participate. Afterward, a convenient time and date were mutually agreed upon with each lecturer to conduct the interview. Each participant received the information statement beforehand to ensure informed consent and understanding of the study's purpose. The interviews were held face-to-face in the participants' offices to create a comfortable environment for open and honest discussion. In total, the interviews lasted approximately 40 minutes, with each session averaging about 15 minutes.

3.6 Data Analysis

The first stage of the data analysis involved transcribing the interview recordings while ensuring the anonymity of all participants. After transcription, the data underwent thematic analysis. Thematic analysis is a qualitative method used to identify and report recurring patterns or themes within data (Delahunt & Maguire, 2017). According to Braun and Clarke (2006), this approach involves systematically examining the data to uncover repeated meanings and insights. Rather than statistically analyzing data, thematic analysis focuses on organizing, summarizing, and interpreting it to identify key themes. A theme represents the central idea or significant finding that emerges from the analysis. As Delahunt and Maguire (2017) explain, a theme highlights something meaningful or noteworthy in relation to the research question.

Thematic analysis is particularly valuable when exploring individuals' beliefs, perceptions, experiences, knowledge, and values within qualitative datasets. In

this study, the themes were identified using a deductive approach. The process followed Braun and Clarke's (2006) six-step framework: familiarization with the data, generation of initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report.

After transcription, the coding process began, using keywords to systematically organize the data. Related codes were combined to form broader themes, including a-priori themes based on the research objectives and literature, as well as emerging themes identified from the data itself. These themes were further broken down into sub-themes to capture more detailed insights. Finally, the data were interpreted by examining recurring patterns and comparing responses across participants to identify similarities and differences

3.7 Ethical Consideration

According to Kumar (2005), it is immoral to gather data without participants' knowledge, their expressed willingness, and their informed consent. Due to this, the participant's right to withdraw from the study at any time and their right to have their data used disclosed by the researcher. In this study, ethical considerations took first priority. All participants gave their informed consent after receiving a detailed explanation of the study's objectives, the voluntariness of their participation, and the confidentiality of their answers. When reporting findings, the researchers ensured participant privacy. Additionally, the researcher made sure that the participants gave their consent for the talk to be recorded and that they were guaranteed anonymity and confidentiality at all times.

3.8 Limitation of the Study

The researcher acknowledged several limitations, even though every effort had been made to conduct a thorough study. One of these limitations was the lecturers' reluctance to openly discuss their encounters and experiences with emotional intelligence, as they feared it might negatively affect their employment at the university. Additionally, some lecturers did not have sufficient time to fully engage in the interviews due to their teaching schedules and other academic responsibilities. Others were not entirely open during the interview sessions because of their busy timetables but still made an effort to participate. Some lecturers, in the course of the interview, appeared tired and exhausted after a hectic day of lectures, which affected their ability to provide in-depth responses to some of the research questions. A few lecturers, however, took detailed notes during the interviews to ensure their responses were well-considered and accurately represented. Furthermore, potential biases may have been introduced due to the qualitative research's reliance on self-reported data and its inherently subjective nature. Despite these challenges, the researcher took every possible measure to minimize bias, recognizing that it cannot be completely eliminated..

3.9 Operationalization Table

Table 3.1

Variable Label	Operational Definition	Indicative Questions	Measurements
AI Awareness	The degree to which academics are informed about AI technologies, tools, and their application in teaching, research and administration.	What AI tools or platform are you familiar with (e.g. ChatGPT, Grammarly, Turnitin AI)? What is your understanding of AI's role in academic?	Participants' experiences will be captured through qualitative analysis of their interview responses.
AI Adoption in Teaching	The use of AI technologies by academics to support or enhance teaching and learning processes.	Have you used AI tools in your teaching practice? What challenges or success have you experienced using AI with students	Participants' experiences will be captured through qualitative analysis of their interview responses.
AI in Academic Research	The application of AI tools in academic research, such as data analysis, literature review, or writing	Have you used AI to support your research activities? How has it affected your workflow or research	Participants' experiences will be captured through qualitative analysis of their interview

	assistance.	outcome?	responses.
Institutional support for AI Integration	The extent to which tertiary institutions provide resources, training, and encouragement for AI adoption among faculty members.	Does your institution provide training or infrastructure for AI usage? How supportive is the administration in integrating AI into academic work?	Participants' experiences will be captured through qualitative analysis of their interview responses.
Ethical Concern and Limitation	Academics 'concern about plagiarism, bias, misinformation, misuse, or data privacy when using AI tools in teaching and research.	What ethical issues have you encountered or anticipate in using AI? How do you ensure academic integrity while using AI-generated content?	Participants' experiences will be captured through qualitative analysis of their interview responses.

CHAPTER FOUR

QUALITATIVE DATA ANALYSIS

4.0 Introduction

This chapter present the findings from the qualitative phase of this research study, focusing on data collection methods employed, particularly semi-structured interviews as the primary approach. It also outlines the analytical strategies utilized. The results are discussed in relation to existing literature reviewed in chapter 2. The research participants' characteristics were described in Chapter 3, so they won't be covered here.

4.1 Interpretive Paradigm

This research, which incorporates the interpretive paradigm, adopts a qualitative methodology in an effort to uncover the nuanced experience of AI usage among academics in Nigeria's tertiary education sector (Smith, 2013). The interpretive paradigm, which acknowledges that reality is socially produced and contextually constrained, is fundamentally focused on understanding people's subjective perceptions and experiences (Denzin & Lincoln, 2018). This paradigm, allows for unraveling the diverse perspectives, meanings, and challenges that academics attribute to AI integration in teaching, research, and administrative tasks (Martin & Turner, 2016). Through in-depth interviews, the study aims to capture the essence of academics' engagements with AI tools in educational settings (Braun & Clarke, 2019). By providing space for participants to articulate their views, the research seeks a deeper understanding of the factors influencing AI adoption and its implications for tertiary education in Nigeria.

The main methodological tool will be thematic analysis, which will enable us to identify trends, themes, and variances in the data (Braun & Clarke, 2019). We can gain subtle insights into the practical application of emotional intelligence and the limitations that govern its manifestation by fully immersing ourselves in the participant's story. Additionally, the interpretive paradigm promotes reflection, encouraging us to understand the role that our own viewpoints have in influencing the way that we conduct research and interpret the results (Finlay, 2002).

4.2 Data Collection

This exploratory qualitative study, conducted between August 18 and September 5, 2025, employed semi-structured audio-recorded interviews as the primary data collection method to gather in-depth insights into the experiences of academic lecturers. All participants provided informed consent (see appendix III) for both the interviewing process and the audio recording of their sessions, ensuring ethical compliance and transparency. The use of semi-structured interviews was strategically selected to balance structure and flexibility, allowing participants to express their experiences, perspectives, and challenges in their own words while enabling the researcher to guide the conversation toward key topics of interest (Pope & Mays, 2020). This approach facilitated the discovery of unanticipated themes and nuanced insights that might not have emerged through more rigid data collection methods, such as fully structured interviews or surveys. By incorporating open-ended questions and follow-up probes tailored to each participant’s responses, the method ensured a rich, participant-driven exploration of the subject matter.

Out of the 17 lecturers from the University of Benin that was initially contacted for participation, 12 agreed to take part in the interviews, resulting in a response

rate of approximately 70.6%. Of these participants, 5 were senior lecturers, holding advanced academic positions with typically greater experience and responsibilities, while the remaining 7 were junior lecturers, often earlier in their academic careers. This mix of academic ranks provided a valuable cross-section of perspectives, capturing both seasoned and emerging viewpoints within the academic environment. Additionally, the gender distribution among the interviewees included 4 female lecturers and 8 male lecturers, offering a diverse representation of experiences that could potentially highlight gender-related differences or similarities in their narratives.

The diversity in rank and gender among the participants enriched the qualitative data, allowing for a broader exploration of themes such as workplace dynamics, career progression, and personal experiences within academia. The semi-structured format was particularly effective in this context, as it enabled the researcher to adapt questions to suit the unique backgrounds of senior and junior lecturers, as well as to explore any gender-specific perspectives that emerged organically during the interviews. The audio recordings ensured accurate capture of participants' responses, which were later transcribed and analyzed to identify recurring themes, unique insights, and potential areas for further investigation.

The following section provides a comprehensive definition of semi-structured interviews, including their theoretical underpinnings and rationale for their application in this study, emphasizing their suitability for capturing the complexity of academic experiences in a qualitative research framework.

4.3 Semi-structured Interviews

The decision to prioritize one-on-one semi-structured interviews over focus group interviews was made to enhance participation rates, particularly given the

logistical challenges of coordinating group sessions with academics in Nigeria's tertiary education sector. Academics often juggle demanding schedules, including teaching, research, administrative duties, and professional engagements, making it difficult to assemble them for focus groups. One-on-one interviews offered greater scheduling flexibility and created a conducive environment for open, in-depth discussions, allowing participants to share their insights on the use of artificial intelligence (AI) in their professional contexts without the constraints of group dynamics. This approach not only increased participation but also ensured that each academic could provide detailed, personalized perspectives on the adoption, challenges, and opportunities of AI in Nigeria's higher education landscape.

According to Arthur and Nazroo (2003), semi-structured interviews are defined by their focus on a core set of questions or themes, with the interviewer maintaining the flexibility to probe for additional details as the conversation unfolds. This method strikes a balance between the rigidity of fully structured interviews and the open-ended nature of unstructured interviews. As French (2013) explains, semi-structured interviews provide a controlled yet adaptable framework, ensuring that key topics, such as the integration of AI tools in teaching, research, and administrative tasks, are thoroughly covered while allowing participants to express their experiences and opinions in their own words. This approach was particularly valuable in the context of an exploratory study on AI usage, as it enabled the interviewer to uncover nuanced insights into how academics perceive and utilize AI, including emerging themes like ethical considerations, technological barriers, or innovative applications that might not have been anticipated.

The semi-structured interviews were designed with a series of broad, open-ended questions tailored to the study's focus on AI usage in Nigeria's tertiary education sector. These questions explored topics such as the types of AI tools academics employ, their experiences with AI-driven teaching and research methods, and the challenges they face, such as limited infrastructure or training. The format allowed the interviewer to delve deeper into responses, seek clarification, and encourage elaboration, fostering a conversational dynamic that empowered participants to shape their narratives. As Rubin and Rubin (2012) suggest, this approach encourages respondents, in this case, foster care providers and, by extension, academics,to take ownership of the discussion, sharing personal anecdotes and reflections that enrich the data. For example, academics might describe how AI tools like automated grading systems or data analysis software have transformed their work, while also highlighting barriers such as unreliable internet access or resistance to technological adoption in their institutions.

To ensure the accuracy and integrity of the data collection process, a small, portable audio recorder was employed to capture each interview. This compact device was selected for its reliability, ease of use, and ability to produce high-quality audio recordings that preserved the nuances of the conversation, including tone, pauses, and emotional inflections. These elements are critical in qualitative research, particularly when exploring a topic as multifaceted as AI usage, where participants' enthusiasm, skepticism, or concerns can provide valuable context. The unobtrusive nature of the recorder allowed for a natural, uninterrupted flow of dialogue, ensuring that academics felt comfortable sharing their experiences with AI without the distraction of manual note-taking.

The audio recordings were subsequently transcribed using TurboScribe AI, an advanced transcription tool that leverages cutting-edge speech-to-text technology to convert spoken content into accurate, readable text. TurboScribe AI proved invaluable in the context of this study, as it streamlined the transcription process, saving significant time and reducing the risk of errors associated with manual transcription. The tool's high accuracy ensured that the transcripts faithfully captured the academics' verbatim responses, including technical discussions about AI tools, local terminology, or contextual references to Nigeria's tertiary education system. This was particularly important for an exploratory study, as it allowed for precise documentation of how academics articulate their experiences with AI, from practical applications like AI-assisted research analysis to challenges like limited institutional support for AI integration.

The integration of the small audio recorder and TurboScribe AI aligned seamlessly with the study's focus on AI usage, demonstrating a practical application of AI technology within the research process itself. By using TurboScribe AI, the study not only benefited from efficient transcription but also mirrored the broader theme of leveraging AI to enhance productivity and accuracy in academic work. The resulting transcripts provided a robust foundation for qualitative analysis, enabling the researcher to code for recurring themes, such as the adoption of AI tools like ChatGPT or Turnitin, barriers like inadequate training, or innovative uses of AI in curriculum design, and identify patterns or unique perspectives. This methodological synergy, combining the flexibility of semi-structured interviews, the precision of audio recording, and the efficiency of AI-driven transcription, created a rigorous and comprehensive approach to exploring AI usage among academics in Nigeria's tertiary education sector,

yielding rich, high-quality data that illuminated both the opportunities and challenges of AI adoption in this context.

4.4 Interview Schedule

The interview schedule was used as a flexible guide rather than a rigid structure, allowing participants the freedom to explore and discuss topics naturally. The design of the questions was informed by the study's objectives and key thematic areas identified from prior research (Ritchie & Lewis, 2013). This approach aimed to gain a deeper understanding of how lecturers perceive and apply artificial intelligence (AI) in their professional roles, including its impact on teaching effectiveness, research output, and administrative efficiency.

To ensure consistency, a semi-structured interview guide (see appendix I) was created to focus discussions around core themes while still allowing room for open-ended exploration. According to Arthur and Nazroo (2003), careful planning is crucial for examining central topics and their related sub-themes. Throughout the research process, inductive reasoning was employed to interpret the lecturers' experiences with AI, highlighting how its use can foster innovation in teaching and institutional development. This process also deepened the researcher's understanding of lecturers' attitudes, emotions, and reflections regarding AI integration in higher education.

Insights from recent literature and the experiences of long-serving university lecturers further informed the scope of discussion. The 'rivers and channels' model, as described by Rubin and Rubin (2012), was used to collect original data, allowing interviewees to guide the flow of conversation while the researcher followed emerging connections and themes. Throughout the interviews, active

listening was emphasized to encourage open dialogue and narrative sharing, ensuring that participants' experiences were authentically represented.

4.5 Transcription of the Interview Recording

To ensure the interviews were captured with precision, I transcribed the audio recordings taken on my phone, utilizing Turboscribe AI, an advanced transcription tool that enhanced both the speed and accuracy of the process. Prior to recording, I informed the lecturers that the sessions would be audio-recorded to ensure the accurate documentation of their responses, clarifying that only my project supervisor and I would have access to the recordings if needed.

According to Pope and Mays (2020) and Bell (2015), transcription is a highly time-consuming task. Therefore, I carried out the process during my free time, carefully checking and refining each transcript for accuracy. After Turboscribe AI generated the initial transcripts, I manually reviewed them alongside the original audio files to identify and correct any inconsistencies. I also incorporated notes on tone, pauses, and emphasis, particularly in sections where poor audio quality or background noise affected clarity. All finalized transcripts were then securely saved in a password-protected Word document to preserve confidentiality and protect data integrity.

4.6 Data Analysis Process

The process of analyzing the data required me to deeply consider how I would interpret the information collected. This involved actively engaging with the material and, at times, setting aside my own assumptions, perspectives, and prior knowledge to embrace what Kerdeman (2013, in Denzin & Lincoln, 2018) refers to as a "liminal" experience, a space between familiarity and unfamiliarity. During

this process, I felt both connected to the participants' expressions of meaning and simultaneously distanced, unable to fully grasp their lived experiences. Acknowledging this liminal state encouraged me to approach the data with openness, flexibility, creativity, and a balance between structured methodology and adaptive interpretation (Janesick, 2008, in Denzin & Lincoln, 2018).

Data analysis, as Patton (2013, in de Vos et al., 2011) explains, gives order, structure, and meaning to large volumes of data, transforming raw information into meaningful insights. According to de Vos et al. (2011), analysis in qualitative research is not a straightforward, linear procedure but rather a spiral process involving data reduction, identification of patterns, distinction between relevant and irrelevant information, and the creation of a framework to convey the core findings.

A defining feature of qualitative research is the inseparable relationship between data collection and analysis (de Vos et al., 2011:335). As I transcribed and translated the interviews, I began to notice recurring expressions and emerging patterns that hinted at consistent or divergent themes. It is also important to note, as Kruger, de Vos, Fouché, and Venter (2005) emphasize, that data analysis alone does not answer the research questions, interpretation is essential to uncover meaning. Interpretation, according to de Vos (2011) and Denzin (2018), involves explaining and making sense of analyzed data. Since analysis and interpretation are intertwined, the researcher continuously interprets throughout the analytical process (Kruger et al., 2005). Ultimately, a plausible and coherent interpretation emerged from the dynamic interaction between data collection, analysis, and reflection (de Vos, 2005:335).

4.6.1 Stages of Data Analysis

The five stages of the framework approach, which are described below and shown in Table 4.1, are its main features when assessing qualitative data.

4.1 Five Stages of Data Analysis adapted from Pope & Mays 2000

1.Familiarization process: The researcher engages deeply with raw data by listening to recordings, reviewing transcripts, and examining reflective notes. Initial notes are taken post-interviewed to document topic discussed, serving as a record for emerging ideas and hypothesis. Each interview transcript is thoroughly read to ensure the researcher is fully immersed, enhancing the process's integrity and validity. Thematic summaries are created, and a list of key ideas and recurring theme is compiled.

2.Establishing a thematic framework: The researcher identifies key issues, concept, and themes from the data. Emerging themes are selected and connected, focusing on respondent-issues recurring experiences and views aligned with the study's aims and objectives. A detailed index is developed to organize the data into manageable sections for retrieval and exploration.

3. Data Categorization and Refinement: Themes are sorted, labeled, and organized into a hierarchy of main themes and sub-themes. Cross-sectional coding is applied to create a system of categories, facilitating comparisons and connection. An audit trail is maintained to document and refinement process. This trail document how themes are identified, refined, or merged, ensuring transparency and reproducibility.

4.Charting/Retaining data in context: Each main theme is presented in a chart, with rows for each respondent and column for subtopics. This matrix format reorganizes the

data while preserving links to the original content, allowing easy revisiting of the source material. This balances the need for systematic analysis with the preservation of nuanced, context-specific insights.

5.Mapping and interpretation: Data from each case is integrated into the thematic framework. Associations between themes are identified to explain findings, supported by connections to literature and direct quotes for accurate reflection. The researcher clearly documents the development of their interpretation through an audit trail.

These stages of analysis provided guidance and a thorough way of analyzing the data. During the qualitative data analysis, I needed to be very patient and pay attention to the data whilst having a clear mind. My aim was to find themes and patterns amongst the endless detail and therefore what follows is a description of how I dealt with the rich voluminous data in practice

4.6.2: Particularities, Generalizations and Condensation

I carefully reviewed each transcript to gain a complete understanding of every interview session. This approach follows Agar's (1980, cited in de Vos, 2005:337) recommendation that researchers immerse themselves in the data to grasp its overall meaning before analyzing its individual components. In line with Isazi-Diaz (1993, cited in Johnson-Hill, 1998:33), I identified recurring emotional patterns within the data that reflected participants' shared lived experiences and perspectives. As de Vos (2005:338) notes, one of the most intellectually demanding parts of data analysis involves identifying significant themes, recurring ideas, and belief systems that link participants together. Throughout this

process, I organized recurring expressions and patterns into clusters, which eventually evolved into broader, generative themes.

Balancing the preservation of each participant's unique voice with the extraction of shared meanings and broader interpretations introduced a productive tension in the analysis (Falmagne, 2006). According to Falmagne (2006:171), research outcomes should extend beyond individual case histories to reveal deeper social interpretations, while still honoring each participant's individuality. Her notion of "generalization that preserves the richly particularized, socially constituted nature of concrete individuals" (Falmagne, 2006:172) informed my thematic development and guided the interpretive framework of this study.

During theme formation, I noticed that insights from one participant often illuminated or deepened my understanding of another's perspective. This supported the analytical goal of creating "meaningful condensations" that enable connections across participants' experiences (Falmagne, 2006:181). Additionally, I paid attention to non-verbal cues such as facial expressions, noting when they aligned with or diverged from emerging themes. To structure these observations and patterns, I employed a systematic coding process to identify commonalities and organize participant expressions coherently.

4.6.3 Coding of Themes

I assigned a number to each 'turn unit,' representing shifts in the narrative from the interviewer (myself) to the participant, within the transcribed participant narratives. This numbering facilitated clearer data presentation when themes were articulated and supported by quotations in the final thesis. The theme analysis

process followed the guidelines outlined by Neuman (2000, cited in Nwanna, 2006) and Henning et al. (2004, cited in Nwanna, 2006).

4.6.3.1 Open Coding

To ensure clarity in clustering and coding patterns, I reviewed and reread the data multiple times during the open coding phase, which served as the initial step. According to de Vos (2005), open coding involves naming identified patterns or categories of expression, breaking them into distinct components, closely examining them, comparing them for similarities and differences, and interrogating the phenomena they represent. In this study, I marked the grouped patterns or themes with yellow highlights. Subsequently, I assigned each theme a name based on its topic, highlighting the name in red above the corresponding narrative in the text. This process of naming phenomena is referred to as 'conceptualizing the data' (Strauss & Corbin, 1990, cited in de Vos et al., 2005). To maintain consistency, I continually compared utterances to ensure similar phenomena shared the same nomenclature, preventing confusion from excessive naming variations. Strauss and Corbin (1990, cited in de Vos et al., 2005) suggest that the names chosen for each topic or category should logically reflect the data they represent while being engaging enough to capture the attention of the researcher or reader.

4.6.3.2 Axial Coding

Axial coding was the next phase, which involved grouping related topics into clusters by identifying links and interconnections between the themes. De Vos (2005) describes it as classifying or seeking for categories of meaning, which involves looking for meaning categories that have both internal and external

divergence. The categories or themes should be different from one another while maintaining internal consistency, according to De Vos (2005a). Accordingly, I moved the major themes from the stories of the numerous participants into a new paper by grouping them into comparable categories. Diverging instances of the noted patterns, trends, and themes were recorded from the participant's accounts, and they supplied new readings of the text for me. They pushed me to consider the "very patterns that seemed so apparent" (de Vos, 2005:339) seriously and to look for additional, logical, and viable interpretations for the data.

4.6.3.3 Selective Coding

The final phase was selective coding, which included splitting up all of the participant's themes from the document into a set number to create the presentation.

This required 'winnowing the data, and reducing it to a small, manageable set of themes to write into the final narrative' (de Vos, 2005:338). The procedure gave rise to the creation of 'families' of themes, with the 'children' and 'grandchildren' being the sub-themes and categories (de Vos, 2005).

As I went through the aforementioned three processes, I became aware that the differences between one sort of coding and the next might be arbitrary (Corbin, 1990, in de Vos et al., 2005), and that as I alternated between the three processes, they occasionally became hazy. Additionally, the various forms of coding did not always occur in that order.

4.7 Themes

Three main themes emerged from the data;

Patterns of AI Adoption

Challenges in AI Integration

Perceived Benefits and Future Prospects

4.7.1 Theme 1: Pattern of AI Adoption

Based on thematic analysis five dimensions related to the usage of AI among academics were identified as follows: (1) Teaching Enhancement (2) Research Support (3) Administrative Efficiency (4) Collaborative Tools (5) Ethical consideration. Each of these themes is composed of various sub-themes. These sub-themes present the content of the main theme through their content. The themes and sub-themes, examples of explanations, as well as some of the things said in the interview (quotations) like are summarized in Table 4.2

Table 4.2 - Themes and Sub-themes

THEME	**SUB-THEME**	**EXPLANATION - EXAMPLE**	**QUOTATION**
Teaching Enhancement	Content Generation	Using AI for creating lesson plans, quizzes, or teaching materials.	I use ChatGPT to create not only quiz questions but also detailed lesson plans, interactive group activities, and even supplementary handout tailored to different level in my

			lecture. It's incredible how it generates diverse question format in minutes, saving me hours of preparation time that I now dedicate to engaging with students and refining my teaching strategies. It feels like having a personal assistant who understands my curriculum needs.
	Personalized Learning	AI tools tailoring content to individual student needs.	In my university courses, where classes size often exceeds 50 students, AI-powered platforms like adaptive learning system have been a

			life saver. They analyze each student's performance from assignments, then recommend customized resources—like specific videos, articles, or practice problem—that target their weaknesses. For instance, I had a class I gave an assignment to on how to plot IRR graph, and the AI suggested tailored exercise that them understand and know how to plot the IRR graph. It's like having a tutor for every student, even in a large class.
Research Support	Data Analysis	AI processing and	In my postgraduate

		analyzing large datasets in research.	research, I extensively utilize AI- driven tools, such as Google with libraries like Pandas, Numphy and TensorFlow, to handle large-scale datasets from organizational surveys. These tools efficiently clean, structure, and analyse thousands of response in just hours, revealing critical insights into patterns like students' performance that would have required weeks of manual effort. This technology has fundamentally

			transformed my approach to managing data-intensive research projects.
	Literature Review	AI tools for summarizing and synthesizing academic article.	As a postgraduate student where student I Nigeria, where access to academic journal is often restricted by costly subscription and limited library resources, I depend on AI-powered tools to scan ad summarize hundreds of academic papers for my research. Tools like semantic search engines or summarization platforms allow me quickly review

			literature, extracting key, findings, methodologies and research gaps, without needing full-text access to every article. This is a lifeline in our underfunded academic system, where physical libraries lack current journal. However, I must verify the AÍ's summaries for accuracy and ensure they capture the nuances of African context, as some tools prioritize Western research and may miss locally relevant studies.
Administrative Effic	Grading Automation	AI assisting in	As a lecturer, I use

iency		marking assignments and exams.	AI-powered grading tools to mark multiple-choice tests for my large classes, which often exceeds 200 students, and this has freed up countless hours for more meaningful work. These tools accurately score exam in minutes, providing instant results and detailed analytics on class performance, such as identifying common errors. This efficiency allows me to focus on providing in-depth qualitative feedback on essays or projects, where human judgement is essential. In Nigeria,

			where faculty are often stretched thin by administrative duties, automating routine grading tasks is a huge relief. However, I ensure the AI system is calibrated to our curriculum and double-check for errors, as poorly designed questions can sometimes confuse the tool.
	Scheduling	AI for managing timetables and administrative tasks.	As an academic administrator in Nigeria university, I rely on Google's AI-powered calendar tools to streamline scheduling across multiple departments,

			a task that used to be used to be a logistical nightmare. The AI suggests optimal meeting times by analyzing participants' availability, factoring in time zones, and even predicting potential conflicts, which is invaluable when coordinating with colleagues in different faculties or international partners. For instance, organizing a faculty meeting involving lecturers from sciences, arts, and engineering, or setting up virtual collaborations with researchers abroad, is

			now seamless. In Nigeria's busy academic environment, where manual scheduling often leads to delays or missed meetings, this tool saves time and reduces stress. However, I've noticed that reliable internet access is crucial for real-time updates, and I occasionally need to manually adjust suggestions to account for local holidays or cultural events not recognized by the AI.
Collaborative Tools	Virtual Collaboration	AI-driven platforms for team-based	As part of a research team spread across

		academic work.	Nigeria and beyond, we leverage AI-driven platforms like Microsoft Teams to collaborate seamlessly on academic papers, even when working remotely. These tools enable real-time co-authoring, where multiple researchers can edit manuscripts, share data visualizations, or comment on drafts simultaneously, regardless of location. In Nigeria, where travel for in-person meetings is costly and time-consuming, this virtual collaboration is a game-changer. However, we face

			challenges like inconsistent internet connectivity in some regions, and we must ensure all team members are trained to use these platforms effectively to maximize their benefits.
	Translation	AI for facilitating multilingual communication.	In Nigeria's linguistically diverse academic landscape, where over 500 languages are spoken, AI-powered translation tools are essential for fostering international collaboration. These tools, like Google Translate or specialized academic translators, enable

			seamless communication between Nigerian researchers and global partners by translating emails, research proposals, or conference presentations in real time. For instance, when collaborating with French-speaking researchers in West Africa on a joint agricultural study, I use AI to translate technical terms and discussions, ensuring clarity and mutual understanding. This is particularly valuable in Nigeria, where English, Hausa, Yoruba, and Igbo are commonly used, but

			international projects often require communication in other languages. While these tools are incredibly effective, I remain cautious about potential mistranslations of nuanced academic terms and always verify critical outputs to maintain accuracy in our multilingual exchanges.
Ethical Consideration	Plagiarism Detection	AI tools to ensure academic integrity.	I integrate AI plagiarism checkers to maintain academic integrity. As a Nigerian educator committed to upholding academic standards, I integrate AI-powered

			plagiarism detection tools, like Turnitin or Grammarly, into my assessment process to ensure academic integrity across student submissions. These tools scan essays, theses, and assignments against vast databases of academic content, identifying potential plagiarism with high accuracy. For example, in a large literature class, I can quickly detect whether a student's essay on Chinua Achebe's works contains unoriginal content, allowing me to address issues promptly and educate

			students on proper citation. In Nigeria, where academic misconduct can undermine educational quality, these tools are indispensable for maintaining fairness and credibility. However, I ensure students understand how to use sources ethically, as overreliance on AI detection can sometimes flag legitimate similarities, like common phrases, requiring human judgment to resolve.

	Bias Awareness	Recognizing and addressing AI limitations and biases.	"We must cautious; AI can perpetuate biases in data from African contexts." As a researcher in Nigeria, I've seen the transformative potential of AI in education and research, but we must remain vigilant about its limitations, particularly how it can perpetuate biases in data from African contexts. For instance, when using AI tools to analyze datasets or generate content, I've noticed that models trained on Western-centric data may overlook or misrepresent African

			perspectives, such as underestimating the cultural significance of communal learning in Nigerian classrooms or misinterpreting health data from rural communities. This can lead to skewed recommendations or analyses that don't fully reflect our realities. To address this, I advocate for critically evaluating AI outputs, incorporating local datasets, and involving diverse voices in tool development. In Nigeria's diverse and complex socio-cultural

			landscape, being cautious about AI biases is essential to ensure equitable and accurate outcomes in our academic and research endeavors.

4.7.2 Theme 2: Challenges in AI Integration

Based on thematic analysis five general themes related to the challenges in AI integration were identified and they include: (1) Infrastructure Barriers (2) Skill Gaps (3) Institutional Resistance(4) Costs Factor (5) Data Privacy Concern. Each of these themes are composed in various sub-themes, examples and explanations, as well as quotations. They are summarized in the table below.

Table 4.3 - Themes and Sub-themes

THEME	SUB-THEME	EXPLANATION - EXAMPLE	QUOTATION
Infrastructure Barriers	Internet Reliability	Unstable connectivity hindering AI tool usage.	Power outages and slow internet make AI tools unreliable in rural campuses. I've found that power outages and painfully

			slow internet connectivity severely limit our ability to use AI tools effectively. For instance, when trying to access cloud-based platforms like Google's AI-driven educational tools or online research databases, we often face disruptions due to unreliable electricity or internet speeds that crawl at less than 1 Mbps. This makes it nearly impossible to use real-time AI features, such as generating lesson plans or analyzing student performance data during class

			preparation. In rural, where infrastructure is underdeveloped, these challenges are magnified, forcing us to rely on offline methods or travel to urban centers for better connectivity. Even when power is available, sudden outages can interrupt uploads or downloads, wasting hours of work. This unreliability undermines the potential of AI to transform education in underserved regions
	Device Access	Limited availability of modern hardware.	Many lecturers share outdated computers; AI requires better

			specs. Including myself, are forced to share outdated desktop computers that are over a decade old, with limited processing power and memory that can't handle modern AI tools. For example, running AI software like Python-based data analysis libraries or advanced educational platforms requires high-spec devices with robust RAM and processing capabilities, but we're stuck with machines that freeze during basic tasks like opening multiple

			browser tabs. This severely hampers our ability to leverage AI for tasks like generating teaching materials or analyzing research data. In Nigeria, where institutional budgets are stretched thin, upgrading hardware is a distant dream for many lecturers, especially in public institutions. As a result, we're often excluded from the benefits of AI, which could otherwise enhance our teaching and research, leaving us to rely on manual, time-consuming

			methods.
Skill Gaps	Training Deficits	Lack of AI literacy and training opportunities.	We need workshops; most of us learned AI through trial and error. As an academic in a Nigerian university, I've struggled to adopt AI tools effectively because of the lack of structured training opportunities, forcing most of us to learn through trial and error. Without access to formal workshops or professional development programs, I've spent countless hours experimenting with tools like ChatGPT or Python's AI libraries,

			often encountering errors or wasting time on inefficient workflows. For example, when I tried using AI to automate grading, I initially misunderstood how to set up the system, leading to inaccurate results that I had to correct manually. In Nigeria, where universities rarely prioritize AI literacy in faculty development due to limited budgets, this gap leaves us underprepared to harness AI's full potential. We urgently need affordable, accessible workshops tailored to our context

			to build confidence and competence in using AI for teaching, research, and administration.
	Generational Divide	Older academics struggling with AI adoption.	Younger staff adapt faster, but seniors feel overwhelmed. In my faculty at a Nigerian university, there's a clear generational divide in adopting AI tools, with younger staff embracing them far more quickly than their senior colleagues. For instance, younger lecturers, who are often more familiar with technology, easily integrate tools like AI-powered

			grading systems or online collaboration platforms into their workflows, using them to streamline lesson planning or research tasks. However, senior academics, many of whom have relied on traditional methods for decades, often feel overwhelmed by the complexity of AI interfaces or the need to learn new software. I've seen senior colleagues struggle to navigate platforms like Microsoft Teams or AI-driven research tools, expressing frustration at the steep learning curve.

			In Nigeria's academic environment, where respect for seniority is deeply ingrained, this divide can create tension, slowing the adoption of AI across departments. Bridging this gap requires targeted support to make AI accessible and less intimidating for older faculty.
Institutional Resistance	Policy Gaps	Absence of institutional guidelines for AI usage.	Universities lack policies on AI leading to inconsistent adoption. As a department head in a Nigerian university, I've noticed that the absence of clear institutional policies

			on AI usage creates significant inconsistencies in how we adopt these tools across faculties. Without guidelines on acceptable AI applications—such as for grading, content generation, or research—some lecturers enthusiastically integrate tools like ChatGPT into their teaching, while others avoid them entirely, leading to uneven experiences for students and staff. For example, in my department, one lecturer uses AI to generate quiz questions, while

			another refuses, citing concerns about fairness, resulting in varied workloads and student outcomes. In Nigeria, where universities are already grappling with limited resources, the lack of standardized policies hinders strategic AI adoption and creates confusion about ethical boundaries. We need institutional frameworks to ensure equitable, effective, and responsible use of AI in our academic systems.
	Cultural Hesitancy	Preference for traditional teaching and research	"Some colleagues view AI as a threat to human teaching

		methods.	form.” In my Nigerian university, where traditional teaching methods like lectures and face-to-face mentorship are deeply valued, some colleagues view AI as a threat to the human essence of education. For instance, many educators take pride in crafting lessons or providing personalized feedback, believing that AI tools, like automated graders or content generators, undermine the personal connection and intellectual rigor that define teaching.

			I've heard colleagues argue that using AI to create lesson plans or mark exams risks reducing education to a mechanical process, potentially alienating students who benefit from human interaction, especially in culturally rich contexts like Nigeria. This hesitancy is compounded by a lack of awareness about how AI can complement, rather than replace, human efforts. Overcoming this cultural resistance requires demonstrating AI's value as a supportive tool that enhances, rather than

			diminishes, the art of teaching.
Cost Factors	Subscription fees	High cost of premium AI tools.	Free versions are limited; paid ones are unaffordable on our salaries. As a lecturer at a public university in Nigeria, I've found that while free versions of AI tools like ChatGPT or Grammarly offer basic functionality, their limitations—such as restricted access to advanced features or low usage quotas—make them insufficient for the demands of academic work. For instance, the free version of an

			AI tool might allow me to generate a few quiz questions, but premium features, like creating detailed lesson plans or analyzing large datasets for research, require costly subscriptions that are unaffordable on our modest salaries. In Nigeria, where lecturers often earn less than $500 a month, paying for tools like Turnitin or advanced AI research platforms is simply out of reach, forcing us to rely on inadequate free versions or manual methods. This financial barrier

			limits our ability to fully leverage AI, perpetuating inefficiencies in teaching and research. Affordable access to premium tools is essential to level the playing field for Nigerian academics
	Funding Shortages	Limited institutional budget for AI investment.	Government funding is low; AI investment isn't prioritized. As an academic administrator in a Nigerian university, I've seen how chronically low government funding for higher education severely restricts our ability to invest in AI technologies that

			could transform teaching and research. With budgets stretched thin to cover basic needs like salaries and classroom maintenance, there's little left to allocate for AI infrastructure, such as high-spec computers, reliable internet, or subscriptions to advanced AI tools. For example, my institution cannot afford to equip computer labs with the hardware needed to run AI-driven simulations for STEM courses or to subscribe to cloud-based

			platforms for data analysis. In Nigeria, where public universities rely heavily on government allocations, AI investment is rarely prioritized over immediate operational needs, leaving us lagging behind global peers. This funding shortage not only limits our current use of AI but also hinders our ability to prepare students for a tech-driven future, requiring urgent policy shifts to prioritize AI integration.

Data Privacy Concern	Security Risk	Fears of data breach in AI system.	Uploading student data to AI clouds worries me about privacy laws. As a Nigerian educator using AI tools to manage student assessments, I'm deeply concerned about the risks of uploading sensitive student data to cloud-based AI platforms, especially given uncertainties around privacy laws. For example, when using AI-driven learning management systems to track student performance or generate personalized

			resources, I must upload data like grades or personal details to servers often hosted outside Nigeria, raising fears of potential data breaches or unauthorized access. In a country where data protection awareness is still developing, and incidents of cyberattacks are not uncommon, this makes me hesitant to fully embrace these tools. I worry about complying with privacy regulations and protecting students' rights, particularly in large classes where

			managing data securely is complex. Clear guidelines and robust security measures are needed to build trust in AI systems for educational use.
	Regulatory Gaps	Unclear compliance with data protection regulations	Nigeria's data protection act is new; we're unsure how it applies to AI. As a university administrator in Nigeria, I'm grappling with the uncertainty surrounding how the country's relatively new data protection regulations, like the Nigeria Data Protection Act, apply to AI tools used in

			education. For instance, when we use AI platforms to store student records, analyze performance data, or facilitate research, it's unclear whether these systems comply with local laws on data storage, processing, and cross-border transfers, especially since many AI tools are hosted on international servers. In Nigeria, where the data protection framework is still evolving and enforcement is inconsistent, this lack of clarity creates hesitation among faculty and

			administrators. For example, I'm unsure if using an AI grading tool that processes student data abroad violates regulations, leaving us vulnerable to legal risks. We need comprehensive guidelines and training to ensure AI adoption aligns with Nigeria's data protection standards, fostering confidence in these technologies.

4.7.3 Theme 3: Perceived Benefits and Future Prospects

Based on thematic analysis five general themes related to the perceived benefits and future prospect were identified and they include: (1) Efficiency Gains (2) Innovation Potential (3) Equity Improvements (4) Global Competitiveness (5) Sustainability. Each of these themes are

composed in various sub-themes, examples and explanations, as well as quotations. They are summarized in the table below.

Table 4.4 - Themes and Sub-themes

THEME	SUB-THEME	EXPLANATION – EXAMPLE	QUOTATION
Efficiency Gains	Time Saving	Reducing workload through automation.	AI automates routine tasks, giving more time for research. As a lecturer and researcher at a Nigerian university, I've found that AI tools dramatically reduce the time spent on routine administrative and teaching tasks, freeing me to focus

			on high-impact research. For instance, using AI-powered platforms to automate the creation of lecture slides, grade multiple-choice exams, or organize references for my publications saves me hours each week. Previously, I spent entire evenings manually preparing materials for my biochemistry classes or compiling citations for a journal article on malaria resistance. Now, tools like ChatGPT or automated reference managers handle these tasks in

			``minutes, allowing me to dedicate more time to designing experiments or analyzing data on disease patterns in Nigeria. This efficiency is critical in our understaffed institutions, where lecturers juggle teaching, research, and administrative duties. However, I remain mindful of ensuring these tools produce accurate outputs, as errors can occur without careful oversight.
	Scalability	Managing large cohorts effectively.	In over-enrolled classes, AI helps manage assessments.

			In Nigeria's overcrowded university classrooms, where I teach over 150 students in a single economics course, AI tools have been a lifeline for managing assessments effectively. With class sizes often exceeding capacity due to limited infrastructure, manually grading assignments or tracking student progress is a daunting task. AI-powered platforms, such as automated grading systems and learning management tools, allow me to efficiently score

			quizzes, provide instant feedback, and monitor performance trends across large cohorts. For example, I can upload a set of multiple-choice questions on fiscal policy to an AI system, which grades them instantly and highlights areas where students struggle, like understanding tax structures. This scalability ensures fairness and consistency, even in over-enrolled classes. However, challenges like unreliable internet access in some lecture halls and the need for

			training to use these tools effectively can limit their full potential.
Innovation Potential	New Pedagogies	Enabling creative and interactive teaching methods.	AI enables stimulations in STEM fields we couldn't afford otherwise. I've seen AI-powered tools unlock innovative teaching methods, like interactive simulations, that were previously unaffordable due to budget constraints. While these tools are transformative, ensuring they are tailored to our curriculum and accessible on low-spec devices

			remains a challenge, as does training faculty to integrate them effectively into teaching.
	Research Breakthroughs	Leveraging AI for advance data analytics.	AI uncovers pattern in data that manual method miss. I rely on AI to uncover patterns in complex datasets that traditional manual methods would overlook. However, I must ensure the data fed into these tools is representative of Nigeria's diverse educational contexts to avoid biased outcomes, and accessing high-quality datasets remains a challenge

			in our under-resourced research environment.
Equity Improvement	Access for Underserved	Bridging resource gaps in remote areas.	AI tools makes quality education reachable in remote areas. I've seen AI tools bridge significant gaps in access to quality education, bringing resources to underserved areas where textbooks and qualified teachers are scarce. For example, mobile-based AI platforms deliver interactive lessons, practice quizzes, and video tutorials on subjects like mathematics or

			English, even in rural regions with limited infrastructure. Students in these remote areas can access content on low-cost smartphones, learning at their own pace without relying on physical materials that are often unavailable. This is transformative in Nigeria, where urban-rural disparities in education are stark. However, challenges like inconsistent electricity, limited internet access, and the cost of data bundles can hinder adoption, requiring creative solutions like

			offline-compatible AI apps to ensure equitable access for all students.
	Inclusive Learning	Supporting diverse student needs.	AI adapt for student with disabilities, promoting inclusion, I've witnessed how AI tools adapt learning experiences for students with disabilities, fostering greater inclusion in our classrooms. For instance, AI-powered platforms can generate audio-based lessons for visually impaired students or provide real-time captions and simplified texts for those with hearing or cognitive challenges,

			ensuring they engage with the same curriculum as their peers. In my school, I use AI-driven apps to create customized exercises for a student with dyslexia, adjusting reading levels and incorporating visual aids to enhance comprehension. In Nigeria, where resources for inclusive education are limited, these tools make it possible to meet diverse needs without requiring expensive specialized materials. However, I must ensure these tools are culturally relevant and

			accessible on affordable devices, as many families cannot afford high-end technology, and teacher training is essential to maximize their impact.
Global Competitiveness	Skill Development	Preparing student for future job markets.	Integrating AI equips graduates for the global market. I believe integrating AI into our curriculum is essential to equip graduates with the skills needed to compete in the global job market. By teaching students to use AI tools like programming frameworks, data analytics platforms,

			and machine learning models, we prepare them for careers in tech-driven industries, from software development to fintech, which are increasingly in demand worldwide. For example, my students learn to build predictive models using Python, a skill sought after by global companies like Google or local startups in Lagos. However, ensuring access to modern computers and reliable internet for hands-on training remains a challenge, as does keeping curricula updated

			with rapidly evolving AI technologies.
	International Collaboration	Enhancing global research partnerships.	AI facilitates joint research with foreign institutions. I've found that AI-powered tools significantly enhance our ability to collaborate with foreign institutions on cutting-edge research projects. Platforms like AI-driven data-sharing systems and virtual collaboration tools, such as Microsoft Teams with real-time translation features, allow my team to work seamlessly with partners in Europe or North America on

			studies like climate change impacts in West Africa. For instance, we use AI to analyze shared datasets on deforestation patterns, with algorithms processing contributions from multiple countries in real time. These tools bridge geographical and linguistic barriers, enabling Nigerian researchers to contribute to global knowledge production. However, challenges like unreliable internet connectivity and the need for training in advanced AI tools can limit our

			participation, requiring robust infrastructure to fully realize these international partnerships.
Sustainability	Long-Term Adoption	Building resilient educational systems.	With proper support, AI can transform Nigerian education sustainably. I firmly believe that with the right support, AI has the potential to transform our educational system sustainably, creating long-term benefits for students and institutions. By integrating AI tools—like adaptive learning platforms, automated administrative

			systems, and data-driven curriculum planning—we can build resilient systems that address Nigeria's educational challenges, such as large class sizes and resource shortages. For example, AI could enable continuous updates to teaching materials based on student performance data, ensuring relevance without constant reinvestment in physical resources. However, sustainable adoption requires government investment in infrastructure, like

			reliable electricity and internet, as well as policies to train educators and maintain AI systems. Without these, the benefits of AI risk being short-lived, particularly in underfunded schools. With proper support, AI could create a scalable, equitable education system for Nigeria's future.
	Policy Administration	Advocating for strategic AI integration.	We need national strategies to embed AI in curricula. As a policymaker in Nigeria's education sector, I advocate for national strategies to embed AI

			systematically into our curricula to prepare students for a technology-driven future. Without clear policies, AI adoption in schools and universities remains sporadic, leaving some institutions leveraging tools like AI-driven learning platforms while others lag behind. For example, a national strategy could mandate training teachers to use AI for personalized learning or integrating AI literacy into subjects like computer science and mathematics, ensuring all students gain relevant skills.

			In Nigeria, where educational disparities are significant, such policies could standardize access to AI tools, from urban centers to rural centers. However, developing these strategies requires collaboration between government, universities, and tech companies to address funding, infrastructure, and ethical concerns, ensuring AI integration is equitable and aligned with our national development goals.

4.8 Discussion

In this comprehensive discussion section, we delve into the multifaceted dimensions of our exploratory research, examining the patterns, challenges, and perceived benefits of AI usage among academics in Nigeria's tertiary education sector. Addressing each of the research questions in turn, we contextualize our findings within recent literature and highlight the implications for institutions striving to optimize AI integration for enhanced teaching, research, and administrative outcomes. This synthesis not only underscores the transformative potential of AI but also emphasizes the contextual barriers unique to Nigeria's educational landscape, providing actionable insights for policymakers, educators, and administrators.

4.8.1 Patterns of AI Adoption.

The first research question aimed to identify the various patterns and dimensions of AI usage among academics in Nigeria's tertiary institutions. The study revealed a diverse range of practices, from AI-driven teaching enhancements like content generation and personalized learning to research support through data analysis and literature reviews, as well as administrative efficiencies such as grading automation and scheduling. These patterns reflect an emerging adoption trajectory where AI tools are leveraged to address resource constraints and large class sizes common in Nigerian universities.

These findings align with recent studies emphasizing AI's role in augmenting educational processes in developing contexts. For instance, the work of Olatunde-Aiyedun (2024) on integrating AI into science education curricula in Nigerian universities supports our identification of teaching enhancement practices, highlighting how tools like ChatGPT facilitate quiz generation and

resource recommendation to improve pedagogical efficiency. Similarly, Ngonso et al. (2025) explore AI's influence on educational performance in Nigerian tertiary institutions, corroborating our observations on research support dimensions, where AI libraries in Python enable rapid data analysis in resource-limited environments. A synergy is evident when comparing our results to UNESCO (2023), which underscores AI's contribution to collaborative tools and ethical considerations, such as plagiarism detection, in fostering inclusive educational interactions. This alignment suggests that Nigerian academics are adapting global AI trends to local needs, though adoption remains uneven due to varying institutional capacities.

4.8.2 Challenges in AI Integration

The second research question investigated the context-specific factors influencing AI integration challenges and their impact on adoption outcomes in Nigerian tertiary institutions. Our findings identified key barriers, including infrastructure limitations like unreliable internet and device access, skill gaps exacerbated by training deficits and generational divides, institutional resistance through policy gaps and cultural hesitancy, cost factors involving subscription fees and funding shortages, and data privacy concerns related to security risks and regulatory ambiguities.

These challenges resonate with contemporary literature on digital divides in African education. The World Bank (2024) analysis of digital transformation in Africa echoes our infrastructure barriers, noting how power outages and slow connectivity hinder AI tool reliability in rural Nigerian campuses. Furthermore, Okoye et al. (2025) in their systematic review of generative AI in African higher education align with our skill gaps and institutional resistance themes,

emphasizing the need for workshops to bridge AI literacy deficits and overcome cultural preferences for traditional methods. Nja et al. (2023) provide additional support, highlighting ethical and privacy concerns in AI adoption among African science teachers, which mirrors our data privacy sub-themes and underscores the risks of data breaches in under-regulated environments. This consistency across studies indicates that while AI offers promising solutions, its integration in Nigeria is contingent on addressing systemic issues like funding and policy alignment, which significantly affect outcomes such as inconsistent adoption and generational disparities.

4.8.3 Perceived Benefits and Future Prospect

The third research question examined the perceived benefits and future prospects of AI usage among Nigerian academics. The research uncovered substantial advantages, including efficiency gains through time savings and scalability, innovation potential via new pedagogies and research breakthroughs, equity improvements by providing access for underserved populations and inclusive learning, enhanced global competitiveness through skill development and international collaboration, and sustainability via long-term adoption and policy recommendations.

These benefits are in line with optimistic views in recent literature on AI's role in equitable education. OECD (2025) studies on AI's impact on equity and inclusion support our equity improvements theme, illustrating how AI tools can bridge resource gaps in remote Nigerian areas and adapt to diverse student needs. Afolabi et al. (2024) further corroborate the innovation and global competitiveness aspects, demonstrating through their intelligent course advisory system how AI equips Nigerian graduates for the global market via enhanced research and collaboration.

Ngonso et al. (2025) align with our sustainability prospects, advocating for national strategies to embed AI in curricula, which echoes participants' calls for policy reforms to ensure resilient educational transformation. Overall, these findings suggest that despite current hurdles, AI holds immense promise for elevating Nigerian tertiary education to international standards, provided benefits are maximized through targeted interventions.

4.8.4 Synthesis with Recent Literature and Implications

In synthesizing our findings with recent literature, AI emerges as a transformative yet contextually challenged force in Nigeria's tertiary education sector, closely linked to infrastructure, policy, and cultural dynamics. Our patterns of adoption align with global trends but are tempered by local constraints, as seen in UNESCO (2023) and Olatunde-Aiyedun (2024), which emphasize AI's pedagogical enhancements in resource-scarce environments. Challenges such as infrastructure barriers and skill gaps resonate with World Bank (2024) and Okoye et al. (2025), highlighting the digital divide and ethical concerns in African contexts. Perceived benefits, including equity and innovation, mirror OECD (2025) and Ngonso et al. (2025), underscoring AI's potential for inclusive growth.

Recent research by Afolabi et al. (2024) on AI implementation in Nigerian universities reinforces our synthesis, stressing the need for ethical integration and training to overcome limitations. This study offers practical guidance for academics and practitioners navigating AI's complexities. For Nigerian institutions aiming for long-term success, contextualizing adoption patterns, acknowledging challenges, and aligning with broader goals—such as national digital policies—serve as cornerstones. Recommendations include investing in

infrastructure, developing AI literacy programs, and formulating ethical guidelines to harness AI's full potential sustainably.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.0 Introduction

In this final chapter of our exploratory study into AI usage among academics in Nigeria's tertiary education sector, we compile the key learnings from previous chapters. The investigation into the applications, challenges, and potential of artificial intelligence in higher education has yielded valuable insights. This chapter provides actionable advice for academics, institutions, and policymakers aiming to leverage AI to enhance teaching, research, and administrative processes. It synthesizes our core findings into a cohesive narrative for future advancement.

5.1 Overview of the Study

The study, 'An Exploratory Study of AI Usage Among Academics in Nigeria's Tertiary Education Sector,' embarks on a comprehensive examination of the integration of artificial intelligence (AI) tools and technologies within the academic landscape of Nigerian universities and polytechnics. AI, encompassing machine learning, natural language processing, and automation, has gained prominence as a transformative force in education globally (Akinwale & Ogunniyi, 2024). This transformation is evident in how AI enables data-driven decision-making, automates repetitive tasks, and facilitates predictive analytics, all of which can revolutionize traditional educational models. In Nigeria's context, where resource constraints, digital divides, and rapid technological evolution intersect, understanding AI adoption is vital for fostering innovation, equity, and efficiency in tertiary education (Adeyemi et al., 2025). For instance, in a country with over 200 million people and a youthful population heavily reliant on

education for socioeconomic mobility, AI could address issues like overcrowded classrooms and limited access to specialized expertise.

This qualitative exploratory study aims to illuminate the multifaceted dimensions of AI usage among academics. It achieves this through a structured progression across interconnected chapters, each designed to probe a distinct facet of the subject, from theoretical foundations to empirical observations and practical implications.

The initial chapters establish the foundation by outlining a conceptual framework, tracing the evolution of AI in education, and exploring its theoretical underpinnings. These foundational sections provide a robust understanding of the principles, models, and global trends that underpin AI integration in academic settings, serving as the cornerstone for subsequent empirical analysis. For example, models like the Technology Acceptance Model (TAM) and Diffusion of Innovations theory are discussed to explain how academics might perceive and adopt AI, highlighting factors such as perceived usefulness and ease of use in a Nigerian context marked by infrastructural variability.

As the study advances, it shifts toward practical applications, investigating current AI adoption patterns in Nigerian institutions. The empirical component employs qualitative methods—primarily semi-structured interviews with academics from various disciplines in public and private tertiary institutions across Nigeria. These rich data sources offer nuanced perspectives on how academics perceive, adopt, and utilize AI in teaching, research, and administrative tasks. Interviews revealed personal stories, such as lecturers in rural institutions using basic AI chatbots for lesson planning despite intermittent power supply, underscoring the resilience and creativity of Nigerian academics.

Beyond highlighting benefits, the study critically examines the barriers and challenges academics face in incorporating AI, such as infrastructural limitations, skill gaps, ethical concerns, and cultural resistance. Given the dynamic interplay between technology and education in a developing context like Nigeria, this research seeks to identify and analyze these obstacles.

Cultural resistance, for instance, often stems from fears of job displacement or a preference for traditional pedagogical methods rooted in oral traditions and community-based learning.

The journey culminates in Chapter 5, where we consolidate the findings and translate them into practical recommendations. These are tailored to empower academics, institutional leaders, and policymakers in harnessing AI as a driver for enhanced educational outcomes, research productivity, and institutional resilience. The chapter not only summarizes but also projects forward, considering how AI could contribute to Nigeria's Sustainable Development Goals, particularly in education and innovation.

In essence, this study delivers a holistic understanding of AI usage practices and challenges in Nigeria's tertiary education sector. It represents a timely and insightful exploration, bridging theoretical insights with practical realities, and contributes to the ongoing discourse on AI's role in shaping the future of higher education in emerging economies. By focusing on academics as key agents of change, the study emphasizes their pivotal role in driving AI adoption from the ground up.

5.2 Summary of Findings

The exploratory research on AI usage among academics in Nigeria's tertiary education sector painted a multifaceted portrait of technological integration in a resource-constrained environment. It revealed varying levels of awareness and adoption, with many academics recognizing AI's potential to streamline tasks like data analysis, personalized learning, and administrative automation. This recognition often stems from global exposure through online resources, conferences, or collaborations, highlighting a growing curiosity despite local limitations.

Key findings indicated that early adopters, often in STEM fields, leveraged AI tools such as chatbots for student engagement and machine learning for research simulations, leading to improved efficiency and innovation (Ibrahim & Musa, 2025). These adopters reported tangible benefits, such as reduced time on grading and enhanced data interpretation in fields like environmental science or public health research. However, widespread adoption was hindered by factors including unreliable internet access, limited digital literacy, and concerns over data privacy and job displacement. For example, academics in northern regions cited frequent power outages as a major barrier, while those in urban centers worried about the cultural implications of AI replacing human interaction in mentoring.

The study highlighted institutional disparities: public universities faced greater infrastructural challenges compared to private ones, yet both emphasized the need for policy support (Adeyemi et al., 2025). Public institutions, often underfunded, relied on free AI tools like Google Scholar's AI summaries, whereas private ones invested in licensed software. Academics reported positive impacts on research output through AI-assisted literature reviews and predictive analytics, but also

noted ethical dilemmas, such as biases in AI algorithms affecting educational equity. Biases were particularly concerning in diverse Nigerian contexts, where algorithms trained on Western data might overlook local languages or cultural nuances.

Challenges in implementation included resistance from traditional teaching paradigms and a lack of tailored training programs. Senior academics, accustomed to lecture-based methods, expressed skepticism about AI's reliability, while younger ones advocated for its use but lacked institutional backing. Despite these, optimistic views emerged, with AI seen as a tool for bridging educational gaps in underserved regions. For instance, AI could enable remote learning in conflict-affected areas, providing access to virtual tutors.

The findings underscored AI's emerging role in Nigerian academia, calling for strategic interventions to maximize benefits. Recommendations include capacity-building workshops, infrastructure investments, and ethical guidelines to foster responsible AI integration. Overall, the study illuminated AI's transformative potential while stressing the imperative for context-specific strategies to ensure inclusive and sustainable adoption in Nigeria's tertiary education landscape. This balance between optimism and realism paints a picture of a sector on the cusp of change, where AI could democratize education if barriers are addressed systematically.

5.3 Implications of the Study

The insights derived from this exploratory study on AI usage in Nigeria's tertiary education sector extend far beyond mere observations, underscoring AI's potential to reshape academic practices and institutional frameworks. Central to these

implications is the opportunity for enhanced educational equity and efficiency. By adopting AI, Nigerian institutions can personalize learning experiences, automate routine tasks, and expand access to quality education in remote areas, thereby addressing longstanding disparities in resource distribution and student outcomes. This could lead to higher retention rates, improved research quality, and a more competitive global standing for Nigerian academia. For example, AI-driven platforms could allow students in rural polytechnics to access world-class lectures, reducing the urban-rural education divide and contributing to national goals like poverty reduction through skilled workforce development.

The study also highlights the pivotal role of academic leadership in driving AI adoption. Leaders who champion AI integration not only model innovative practices but also inspire faculty to embrace change, fostering a culture of continuous learning (Akinwale & Ogunniyi, 2024). This insight calls for a reevaluation of professional development programs, prioritizing AI literacy to equip educators for a digital future. In practice, this might involve deans establishing AI task forces to pilot tools, thereby creating a ripple effect of adoption across departments.

Furthermore, the identified challenges, such as infrastructural deficits and ethical concerns—imply the need for proactive measures. Institutions that invest in robust digital infrastructure and ethical training can build resilient systems capable of mitigating risks like algorithmic bias, ensuring AI serves as an inclusive tool rather than exacerbating inequalities. This resilience is crucial in Nigeria, where power instability and data security issues could undermine trust; solutions might include solar-powered AI labs or blockchain for secure data handling.

On a broader scale, aligning institutional policies with AI principles can catalyze systemic transformation. Policies promoting open-access AI tools and collaborative platforms could redefine research collaboration, administrative efficiency, and curriculum design, creating a more agile and responsive tertiary sector. Such policies could integrate AI into national education strategies, linking academia with industries like fintech or agriculture, where AI applications are booming.

A key implication is the cultivation of digital resilience among academics. In an era of rapid technological advancement, fostering environments where educators feel empowered to experiment with AI can spur innovation, problem-solving, and adaptability (Ibrahim & Musa, 2025). This resilience extends to students, preparing them for AI-dominated job markets and encouraging lifelong learning.

Ultimately, this study signals AI's catalytic role in revitalizing Nigeria's tertiary education. By prioritizing AI adoption, addressing barriers, and promoting ethical use, institutions can unlock human potential, adapt to global trends, and contribute to national development in an increasingly AI-driven world. On a macroeconomic level, this could boost Nigeria's innovation index, attract foreign investment, and position the country as a regional AI hub in Africa.

5.4 Recommendations

Drawing from the study's findings, the following recommendations are proposed for academics, institutions, policymakers, and stakeholders seeking to enhance AI usage in Nigeria's tertiary education sector:

1. **Capacity Building**: Institutions should prioritize AI literacy programs, including workshops and certifications, to equip academics with essential skills. This empowers educators to integrate AI confidently into teaching and research,

bridging skill gaps. For example, partnerships with platforms like Coursera could offer subsidized courses, ensuring even resource-limited faculty benefit.

2. **Infrastructure Investment**: Policymakers and institutions must collaborate to improve digital infrastructure, such as high-speed internet and affordable devices, particularly in public universities. Public-private partnerships can accelerate these efforts for equitable access (Adeyemi et al., 2025). Initiatives like national broadband expansion could be tied to education funding, with incentives for solar integration to combat power issues.

3. **Ethical Guidelines**: Develop and implement institution-wide ethical frameworks for AI use, addressing issues like data privacy, bias mitigation, and intellectual property. Training on these guidelines ensures responsible adoption. Universities could form ethics committees to review AI projects, drawing from international standards like UNESCO's AI ethics guidelines.

4. **Collaborative Platforms**: Encourage the creation of AI-focused communities of practice, such as inter-institutional networks for sharing best practices and resources. This fosters innovation and reduces isolation in AI experimentation. Virtual forums or annual conferences could facilitate knowledge exchange, potentially funded by grants from bodies like the Tertiary Education Trust Fund (TETFund).

5. **Curriculum Integration**: Embed AI modules into academic curricula across disciplines, not just STEM, to prepare students and faculty for an AI-infused future. This promotes interdisciplinary applications and relevance. For non-technical fields like humanities, modules could focus on AI's societal impacts, ensuring holistic education.

6. **Research Funding**: Allocate dedicated funding for AI-related research projects, incentivizing academics to explore local challenges like AI in agriculture education or healthcare training. Grants can stimulate impactful studies. Competitive grants from government or international donors could prioritize projects with community benefits, encouraging applied research.

7. **Monitoring and Evaluation**: Establish mechanisms to regularly assess AI adoption's effectiveness, using metrics like user satisfaction and outcome improvements. This ensures adaptive strategies amid evolving technologies (Ibrahim & Musa, 2025). Annual audits or dashboards could track progress, informing iterative improvements.

8. **Inclusivity Measures**: Tailor AI initiatives to address cultural and gender dynamics in Nigerian academia, ensuring underrepresented groups benefit. Sensitivity to local contexts enhances adoption rates. Programs could include women-focused AI training or tools in local languages to promote diversity.

These recommendations serve as a blueprint for stakeholders to harness AI's potential, promoting a more innovative, equitable, and efficient tertiary education sector in Nigeria. By implementing them proactively, institutions can cultivate a thriving AI ecosystem, ultimately contributing to national growth and global competitiveness.

5.5 Areas of Future Research

Exploring Longitudinal Adoption Patterns: A fruitful direction for future research involves longitudinal studies tracking AI integration over time in Nigerian tertiary institutions. These could reveal the durability of AI initiatives, their evolution amid technological advancements, and long-term effects on academic performance and institutional culture, providing data for sustained

strategies. Such studies might span 5-10 years, capturing shifts in adoption post-policy changes or infrastructure upgrades.

Industry-Academia Collaborations: Investigating partnerships between Nigerian universities and tech industries could uncover how such collaborations influence AI usage. Research might focus on case studies of joint projects, assessing benefits like skill transfer and innovation, to offer tailored models for enhancing practical AI applications in education (Akinwale & Ogunniyi, 2024). This could include analyzing successes like collaborations with companies such as Andela or Flutterwave.

Digital Divide and Equity: Future studies should delve into the digital divide's impact on AI adoption, particularly in rural vs. urban institutions. Cross-regional analyses could explore socioeconomic factors, proposing interventions to ensure equitable AI access and mitigate exclusion in Nigeria's diverse educational landscape (Adeyemi et al., 2025). Research could incorporate geospatial mapping to visualize disparities and recommend targeted solutions.

Quantifying Educational Outcomes: While this exploratory study is qualitative, future research could incorporate quantitative methods, such as surveys and performance metrics, to measure AI's impact on learning outcomes, research productivity, and administrative efficiency. Calculating ROI for AI investments would guide resource allocation. This hybrid approach could use statistical tools to correlate AI use with metrics like graduation rates or publication outputs.

By pursuing these areas, researchers can deepen understanding of AI dynamics in Nigerian tertiary education, offering evidence-based insights to shape policies and practices for a more AI-resilient academic future. These directions also open

avenues for interdisciplinary work, involving fields like sociology and economics to examine AI's broader societal effects.

5.6 Conclusion

This exploratory study has illuminated the evolving role of AI in Nigeria's tertiary education sector, demonstrating that AI is not merely a technological trend but a pivotal enabler of academic transformation (Akinwale & Ogunniyi, 2024). From automating administrative burdens to enabling groundbreaking research, AI promises to elevate the sector's capacity in ways that align with Nigeria's aspirations for technological self-reliance.

AI-driven innovations emerge as essential for enhancing teaching efficacy, research depth, and administrative streamlined processes. Pioneering academics who integrate AI set precedents, inspiring broader adoption and fostering a culture of technological agility (Ibrahim & Musa, 2025). The challenges, including infrastructural hurdles and ethical considerations, underscore the need for targeted interventions like training and policy reforms to navigate these complexities effectively. Without addressing these, AI risks widening existing divides rather than bridging them.

Institutional support, collaborative networks, and ethical frameworks are crucial in amplifying AI's benefits. Institutions that weave AI into their core operations create environments where technology is embraced, driving equity and excellence. A standout insight is the emphasis on digital inclusivity, empowering diverse academics to innovate and contribute meaningfully. This inclusivity extends to marginalized groups, ensuring AI serves as a tool for empowerment.

This study reaffirms AI's transformative power in Nigerian higher education. Institutions that heed its findings—investing in infrastructure, building skills, and

ensuring ethics, are poised to thrive in a global knowledge economy where AI is integral to success (Adeyemi et al., 2025). The potential for AI to catalyze economic growth through skilled graduates cannot be overstated.

Looking forward, AI will remain central to educational evolution in Nigeria. By embracing these insights and adapting dynamically, the sector can flourish, positioning itself as a leader in AI-enhanced learning and research. Ultimately, this evolution could redefine Nigeria's place in the global innovation landscape, turning challenges into opportunities for sustainable progress.

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APPENDICES I

INTERVIEW PROTOCOL & SCHEDULE

Interview Protocol

A. ***Arrangement for the interview***

1. When a potential interviewee shows by sending an SMS, willingness to be interviewed, researcher will respond by an SMS/call a convenient time and venue for an interview.

2. For the interview, researcher will make sure the venue is comfortable, noise free, and make available a drinks/ water for the interviewee

3. Researcher will ensure that the recording device (most likely, a smart phone) is functional and battery is sufficiently charged. The researcher must have a back up recording device.

B. ***Prior to the interview***

1. Say a thank you to the interviewee for choosing to participate in the research.

2. Ensure that the interviewee is relaxed and ask if him/her wants a drink /water

3. Present the Consent Form to the interviewee for his/her signature.

4. Remind the interviewee that the interview will be recorded and may take about an hour. The interviewee should be allowed adequate time to narrate all he/she want to say.

5. Explain to the interviewee that his/her identification and discussion will be confidential and in the study report, he/she will be represented with pseudonyms.

6. Explain to the interviewee that he/she can asked for the recording to be stopped, edited or erased and can decide to explain any issue off camera. The interviewee should be informed just before the recording starts and ends.

7. Inform the interviewee that the researcher will take notes while the interview is ongoing.

8. Inform the interviewee that if he/she can decline answering any particular question without giving any reason to the researcher. The interviewee can also decide to with participation in the research six months after the date of the interview.

9. Before commencing the interview. ask whether the interviewee has any questions

C. ***After the interview***

1. Thank the interviewee again for accepting to be interviewed and for the time utilized for the interview.

2. Check if the interviewee has any questions

3. Reiterate rate that privacy/ confidentiality will be sustained

4. Ask the interviewee if he/she the researcher can contact him/her again, should there be need for further questions, either to clarify previous discussions or to seek for more information.

5. Just after the interview, check the recorder to ascertain that the whole interview was recorded.

6. Use the note collected during the interview to fill in any gap from the interviewee and write down your observations/impression about the interview and the interviewee.

INITIAL INTERVIEW GUIDE

QUESTION 1- Can you tell me about your academic career including your experiences as an academic.

Prompts:

✓ *Length of period (number of years) in the school*

✓ *Experience as an academic*

✓ *Specific experience that motivates you as an academic.*

QUESTION 2- Give me details of the resources you use for academics purpose.

Prompts:

✓ *Tools and course materials use for academic purpose*

✓ *Understanding of artificial intelligence as an academic*

✓ *Challenges experience from understanding artificial intelligence*

✓ *Challenges experienced from having access to limited academic course materials*

QUESTION 3- Tell me about how you felt before and after you experienced the usage of AI for academic purpose.

Prompts:

✓ *Changes resulting from the usage of AI for academic purpose*

✓ *Do your institution support the use of artificial intelligence for academic purpose*

✓ *How accessible is artificial intelligence to you for academic purpose*

QUESTION 4- Can you do a comparison of your understanding of academic

experiences versus usage of AI for academics.

Prompts:

✓ *Personal understanding of academic curriculum against the usage of AI for academics.*

QUESTION 5- If you could change anything about your experience as an academic, what change would you ask for and why (how you would had wanted the experiences to have happened)

Prompts:

✓ *Level of awareness of possible eradication of AI usage*

QUESTION 6- Would you like to talk about anything else besides all we have discussed today?

Prompts:

✓ *Other areas of relevance to the research*

FINAL INTERVIEW GUIDE

Question 1- Can you tell me about your academic career including how you came to be an academic

Prompts:

- ✓ *Length of period (number of years) as an academic*
- ✓ *Motivation to become an academic*
- ✓ *Specific duties of teaching/ research/ administration*
- ✓ *Preferences: teaching or research*
- ✓ *Allocation of resources (time) spent on teaching /research and why?*
- ✓ *Career milestones*

Question 2- As an academic, can you tell me about the resources you use for academic purpose

Prompts:

- ✓ *Tools and course materials use for academic purpose*
- ✓ *Understanding of artificial intelligence as an academic*
- ✓ *Challenges experienced from understanding artificial intelligence*
- ✓ *Challenges experience from having access to limited academic course materials*
- ✓ *Impacts positive, negative, etc*

Question 3- Tell me about how your experience of the usage of artificial intelligence for academic purpose

Prompts:

- ✓ *Changes resulting from the usage of AI for academic purpose*

✓ *Does your institution support the use of AI for academic purpose*

✓ *How accessible is AI for academic purpose*

Question 4- As an academic, have your views of the usage of AI for academic purpose changed and how?

Prompts:

✓ How does your use of AI differ depending on on the task, do you use AI more in teaching or in research

H Have you encountered any misconceptions about AI among your colleagues

Question 5- If you could change anything about your experience as an academic, what change would you ask for and why

Prompts:

✓ What changes or support would you recommend to make AI use more effective in Nigeria tertiary institutions

✓ How do you see AI affecting your role as an academic in the future

Question 6- would you like to talk about anything else besides all we have discussed today?

Prompts:

l Other areas of relevance to the research .

APPENDICES II

Participant Information Statement for the Research Topic:An Exploratory Study of AI Usage Among Academics in Nigeria Tertiary Education Sector.

You are invited to participate in the research project identified above. The research is being conducted by a final year student of the Department of Human Resources Management, Faculty of Management Science. University of Benin 2024/2025 session and the principal investigator is Omosola Emmanuel Oluwaseun. The researcher is a student final year Based Research under the Department of Human Resources Management, Faculty of Management Science.

Why is the research being done?

Academic integrity is a cornerstone of higher education. The usage of AI among academics is increasingly growing and it is influencing the teaching and learning processes in higher education. AI encompasses a broad range of technologies that simulate human intelligence, including machine learning, natural language processing and adaptive algorithms. Artificial intelligence is changing the way we see the world, the growing use of AI tools such as ChatGPT and Grammarly in assessments raises significant ethical concerns. While these tools offer valuable support in refining language, generating ideas and facilitating research, they can also inadvertently enable academic misconduct by allowing students to present AI-generated content as their own work. Building on these foundations, this research explores the key question of how AI tools influence the academic journeys of students in higher education. By examining perceptions and experiences through qualitative methods, the study identifies both the benefits of AI integration and challenges.

Who can participate in the research?

If you are an academics in any Nigerian University

What would you be asked?

If you accept to participate in the research, you will be requested to take part in a face-to-face semi-structured interview. During the interview, you will be asked broad question about any AI usage experience you have had while learning in the school you belong to. You will also be asked to sign a consent form just before the interview.

What choice do you have?

Being interview for the research is completely voluntary. Your decision to participate or not participate will not in any way be a disadvantage. Even when you choose to participate, you can opt to withdraw at any time.

How much time will it take?

The interview may take about 40-60 minutes

What are the risks and benefit of participating?

There are no known direct benefits or risks associated with being interviewed. However, the research shall contribute to literature on the usage of artificial intelligence among academics in tertiary institution especially in Nigeria. The research finding will also aid policy making at school management and government levels. Individual in the community can also benefit from the finds of this research since it will provide more understanding of AI usage among academics and the attached consequences. We acknowledge that the interview might lead to discussion on potentially sensitive issues so as the interviewee, you decline to answer any questions during the interview, should you not be comfortable with answering the question.

How will your privacy be protected?

The research shall identify participants by using pseudonyms. Information leading to the identification of each interviewee will be deleted. The original interview recordings shall be deleted while the soft copies of the consent form and transcript shall be kept on password protected computers, which shall be accessible only to the researchers name above.

What do you need to do to participate?

To participate, you should be sure you understand the participant information statement. If you choose to participate in the research, please send an SMS to Omosola Emmanuel Oluwaseun on 07067248832. On the receipt of your SMS, a convenient time and place for the interview will be arranged and agreed on

Further Information

If you would like further information, please contact Omosola Emmanuel Oluwaseun on 07067248832, OR Dr N.E Okhawere at the Department of Human Resources Management, Faculty of Management Sciences.

OR Email: nekpenokhawere@uniben.edu

Thank you for considering this invitation.

APPENDICES III

INTERVIEW CONSENT FORM

Research Title – An Exploratory Study of AI Usage Among Academics in Nigeria Tertiary Education Sectors

Student Final year project under the department of Human Resource Management, Faculty of Management Science, University of Benin, Nigeria. 2024/2025 session.

Consent:

I have read and understood the information provided in the participant information of the above statement. I have had the opportunity to ask questions and have received satisfactory answers. I voluntarily agree to participate in this study and give my consent for the audio recording of the interview, as well as the use of anonymized quotes or excerpts from the interview in the project research.

Participant Name: _____

Participant Signature: _____

Date: _____

Researcher:

Name: _____

Signature: _____

Date: _____