UTILISATION OF ARTIFICIAL INTELLIGENCE FOR ACADEMIC ACTIVITIES BY COMPUTER SCIENCE STUDENTS OF KWARA STATE POLYTECHNIC, ILORIN, NIGERIA

By

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ND/23/LIS/FT/0023

SUBMITTED TO
DEPARTMENT OF LIBRARY AND INFORMATION SCIENCE,
INSTITUE OF INFORMATION AND COMMUNICATION TECHNOLOGY,
KWARA STATE POLYTECHNIC, ILORIN

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF NATIONAL DIPLOMA (ND) IN LIBRARY AND INFORMATION SCIENCE

JUNE, 2025

CERTIFICATION

This is to certify that this project titled **"*Utilisation of Artificial Intelligence for Academic Activities by Computer Science Students of Kwara State Polytechnic, Ilorin, Nigeria*"** by Abdulrahman Abdulsalam Opeyemi meet the regulations guiding the award in National Diploma in Kwara State Polytechnic Ilorin and is approved.

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DEDICATION

This project is dedicated to God for being my ultimate source of strength and inspiration. In Him, I derived all powers needed to live, weather the storms and become an embodiment of hope to myself and the people around me.

ACKNOWLEDGEMENT

All praise is to God, the most beneficent, the most merciful. My sincere appreciation goes to my parents for their concern, prayers and words of encouragements towards the completion of this progamme. My utmost gratitude also goes to my supervisors Mr. Sulyman, A. S. for her moral and intellectual guidance and contribution towards the possibility of this project and all other lectures of the department.

To be given the privilege to contribute stream of knowledge make me appreciate the entire management of Kwara State Polytechnic Ilorin, and my noble department of Library and Information Science and my fellow colleagues that made my stay on the citadel more interesting and all my friends without whom this great work could not be achieved.

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Abstract

This study explores utilisation of artificial intelligence for academic activities by computer science students of Kwara State Polytechnic, Ilorin, Nigeria. Descriptive survey design was used in this study. The population of this study are students in department of computer science, Kwara State Polytechnic, Ilorin, Nigeria. Sample size of this study is 217. Simple random sampling technique was used to select the students who are available at the point of distribution of questionnaire. Data obtained was then presented and analysed by using simple percentage and frequency table. Furthermore, result of findings revealed that use of AI for academic purposes impacts the students' academic activities by improving the quality of the academic information students have access to, helping students generate academic contents and impacting the efficiency of carrying out students' academic tasks. More so, findings point that most of the students use AI for assignments, homework and presentations. Also, most of the students can't use AI for academic purposes because of poor Internet connectivity, fear of using AI, overreliance on technology and students cheat with AI. Finally, result of the findings shows that most of the students believed that the solutions to their challenges are orientations should be made to students on different AIs they can use for academic purposes, developers of AIs should prioritise protecting the privacy of students using AIs and students should be taught the skills and competences needed to use AIs for their academic purposes.

Keywords: Utilisation, Artificial Intelligence, Academic Activities, Computer Science Students, Kwara State Polytechnic, Ilorin, Nigeria.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Library and Information Science students are sets of individuals enrolled in Library and Information Science schools for the purpose of acquiring the skills of creation, collection, generation, processing, organisation, storage, conservation, preservation, access, retrieval, dissemination and utilisation of information materials in libraries and other information centers. Thus, for the progress of the students to be measured in their course of study, there arose the concept of academic activities.

Academic activities of computer science students is the knowledge gained by the students which is assessed by marks assigned to the students by a lecturer. It can also be seen as educational goals set by computer science students and lecturers to be achieved by a student over a specific period of time. It is a set of goals measured by using continuous assessment or examinations results of computer science students. Academic activities of computer science students is the extent to which the students, lecturers, or institution has attained their short or long-term educational goals and is measured either by continuous assessment or cumulative grade point average (CGPA) (Narad & Abdullah, 2016; Tentama & Abdullah, 2019).

Rono as cited in Abaidoo (2018) opined that academic activities of computer science students is a key feature in every computer science academic program. It is considered to be the centre around which the whole computer science academic program revolves. Narad and Abdullah (2016) opined that the academic activities of computer science students determines the success or failure of the academic institution. Singh, Malik and Singh (2016) also argued that academic activities of computer science students have a direct impact of relevance of computer science practices on the socio-economic development of a country. Academic activities of computer science students serves as a bedrock for knowledge acquisition and the development of information management skills. This makes academic activities of computer science students to be the most priority of all computer science educators.

Factors impacting academic activities of computer science students have received much attention from computer science educators and researchers. Singh, Malik and Singh (2016)

found that several factors impact academic activities of computer science students. Narad and Abdullah (2016) found daily study hours, social economic status of parents/guardians and age as factors that significantly affects academic activities of computer science students. They also found that economic status of parents, their academic background and encouragement as factors that influence computer science students' academic activitiess. Proper guidance from parents and teachers, communication skills, and learning facilities have also been found as a significant determinant to academic activities (Singh, Malik & Singh, 2016).

The findings from Narad and Abdullah (2016), Singh, Malik and Singh (2016) revealed that home, school, students, teacher, environmental, personal, social, psychological and economic factors have impact on academic activities of computer science students. Other authors have also found that age, gender and parents' level of education affect academic activities of computer science students (Khan, Iqbal & Tasneem, 2015; Abaidoo, 2018). It should be noted that these findings differ among countries, different academic levels, the subjects involved and above all did not considered the impact of artificial intelligence on academic activities of students, despite its enormous advantages and disadvantages to academic activities.

Artificial Intelligence (AI) is intelligence shown by machines. In computer science the field of AI defines itself as the study of "intelligent agents." Generally, the term "AI" is used when a machine simulates functions that human's associate with other human minds such as learning and problem solving (Gupta, 2017). It is the science and engineering of making computers behave in ways that require human intelligence (Andrew, 2017). This means that AI is a branch of information technology that allows the programming and designing of both hardware and software systems capable of providing machines with certain characteristics considered typically human, such as, for example, visual, spatio-temporal and decisional perceptions (Travaglioni, Petrillo, De Felice, Cioffi and Piscitelli, 2020).

Artificial intelligence (AI), sometimes called machine intelligence, is intelligence demonstrated by machines, in contrast to the natural intelligence displayed by humans and other animals, such as "learning" and "problem solving (Baum, 2021). In the last few years, there has been an arrival of a large amount of software that utilizes elements of artificial intelligence. Subfields of AI such as Machine Learning, Natural Language processing, Image Processing and Data mining have become an important topic for today's tech giants (De

Felice, Petrillo & Zomparelli, 2018). AI technology ranges from machines truly capable of thinking to search algorithms used to solve societal problems (Kumar, 2018).

On a very broad account the areas of artificial intelligence are classified into sixteen categories. These are: reasoning, programming, artificial life, belief revision, data mining, distributed AI, expert systems, genetic algorithms, systems, knowledge representation, machine learning, natural language understanding, neural net-works, theorem proving, constraint satisfaction, and theory of computation (Travaglioni et al, 2020). In the 21st century, AI has become an important area of research in virtually all fields: Engineering, science, education, medicine, business, accounting, finance, marketing, economics, stock market and law, among others. The range of AI has grown enormously to the extent that tracking proliferation of studies becomes a difficult task.

Robinson (2018) asserted that artificial intelligence is involved in the project of developing machines endowed with the intellectual processes and characteristics of humans, such as the ability to reason, discover meaning, generalize, or learn from past experiences. It is an intelligence demonstrated by machines in contrast to natural intelligence displayed by humans and other animals. This implies that machines can be made to perform tasks commonly associated with intelligent beings like humans and animals. It is an area of computer science with the help of digital electronics that emphasizes the creation of intelligent machines that work and react like humans (Kumar, 2018).

The above reviews, thus, justified why this study will be investigating the utilization of artificial intelligence for academic activities by computer students of Kwara State Polytechnic, Ilorin, Nigeria.

1.2 Statement of the Problem

The recent times have witnessed a massive surge in technological development which has resulted to the use of artificial intelligence for academic activities by computer science students. Aderounmu (2022) observed that 33 million Nigerian students, which represents 15.8 percent of the total population used social networking sites and artificial intelligence-related technologies in 2021. This is because artificial intelligence are rapidly displacing traditional learning tools because of prompt generation of contents, purpose-driven functions and wide range of contents that can enrich learning experience of students which could later impact the computer science students' academic activities.

However, it has been observed that most computer science students are finding it difficult to leverage artificial intelligence to enhance their academic activities, due to some problems such as poor awareness of artificial intelligence to be used to boost their academic activities, inadequate locally-made artificial intelligence, inability to interact with the available artificial intelligence, inadequate ICT infrastructure, poor internet facilities and others.

The foregoing, therefore, serves as a premise for this study to be designed to investigate the utilisation of artificial intelligence for academic activities by computer science students of Kwara State Polytechnic, Ilorin, Nigeria.

1.3 Objectives of the Study

The main objective of this study is to examine the utilisation of artificial intelligence for academic activities by computer science students of Kwara State Polytechnic, Ilorin, Nigeria. The specific objectives are to:

1. Examine the level at which artificial intelligence impact academic activities of computer science students, Kwara State Polytechnic, Ilorin, Nigeria,
2. Examine the methods adopted in using AI for academic activities of students of computer science, Kwara State Polytechnic, Ilorin, and;
3. Examine the challenges limiting the use of artificial intelligence academic activities by students of computer science, Kwara State Polytechnic, Ilorin, Nigeria.

1.4 Research Questions

These research questions guided the study:

1. What are the level at which artificial intelligence impact academic activities of computer science students, Kwara State Polytechnic, Ilorin, Nigeria,
2. What are the methods adopted in using AI for academic activities of students of computer science, Kwara State Polytechnic, Ilorin?
3. What are the challenges limiting the use of artificial intelligence academic activities by students of computer science, Kwara State Polytechnic, Ilorin, Nigeria?

1.5 Significance of the Study

This study will be of immense values to management of the Department of Computer Science, Kwara State Polytechnic, Ilorin; Library and Information Science Educators, librarians, parents, students, educational policy and decision makers and other stakeholders of educational programmes in Nigeria by revealing the how they can support students use artificial intelligence for academic activities and how it can help students' academic activities.

Specifically, the management of the Department of computer science and computer science Educators would benefit from this study by knowing how they can support students on the use of artificial intelligence to positively impact their academic activities. This study is also expected to be of value to librarians because it is expected to reveal some artificial intelligence they can be using to impact students' academic activities. Furthermore, parents would benefit from this by knowing different artificial intelligence their children are using, which they can be encouraging and supporting them to be using to impact their academic activities.

Furthermore, educational policy and decision makers will also derive values from this study by knowing some academic activities students can perform on artificial intelligence and also know the challenges limiting students from using artificial intelligence to boost their academic activities which they can rise to address. Going forward, other stakeholders of educational programmes would learn from this study, how continuous use of artificial intelligence can impact students' academic activities. Above all, students themselves would benefit from this study by being exposed to various artificial intelligence and academic activities they can use it for, in order to promote the attainment of their academic goals.

1.6 Scope of the Study

This study will cover the students of Computer Science, Kwara State Polytechnic, Ilorin, Nigeria. The department has students in four levels, ranging from ND One and Two (Full-Time and Part-Time), HND One and Two (Full-Time). The students of the aforementioned levels will provide data on the subject of this study. The data obtained from the students will be used in the analysis and arriving at results of this study.

1.7 Operational Definition of Terms

This aspect contains the terminologies used in the study:

Utilisation: This is the use of artificial intelligence for academic activities of students of Computer Science, Kwara State Polytechnic, Ilorin.

Artificial intelligence: These are applications, technological tools or devices that are designed or programmed to make decision on their own at a particular time, which are expected to impact academic activities of students of Computer Science, Kwara State Polytechnic, Ilorin, Nigeria.

Academic Activities: This is the end goal of academic activities of students of Computer Science, Kwara State Polytechnic, Ilorin, which is expected to be impacted by artificial intelligence.

Computer Science: This is a department in Kwara State Polytechnic, Ilorin, which is devoted to training students on computation, information and automation, which the academic activities of its students is expected to be impacted by artificial intelligence.

Students of Computer Science: These are learners admitted to study Computer Science in Kwara State Polytechnic, Ilorin, who are expected to use artificial intelligence to impact their academic activities.

Kwara State Polytechnic, Ilorin: This is a tertiary institution owned by the State Government of Nigeria and located in Ilorin, Kwara State, which awards National Diploma (ND) and Higher National Diploma (HND) certificates to students of Library and Information Science, whose academic activities has been impacted by artificial intelligence.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter focuses on the review of the literature related to the study; the review is arranged under the following sub-heading:

2.2 Concept of artificial intelligence (AI)

2.3 Concept of academic activities

2.4 Impacts of AI on academic activities

2.5 Some AIs used for academic purposes

2.6 Methods of using AI for academic activities

2.7 Benefits of AI to academic activities

2.8 Challenges faced by students when using AI for academic purposes

2.9 Summary of the literature reviewed

2.2 Concept of Artificial Intelligence (AI)

Artificial Intelligence, or AI, refers to computing systems that work similarly to human brains. The human brain processes data through organic neural networks, and AI emulates these networks. AI was designed to perform tasks not easily defined by specific algorithms, such as image and voice recognition & generation, text generation, and more. Essentially, AI is any task that requires recognizing patterns with numerous parameters (John, 2022).

Artificial Intelligence refers to the development of machines or computers that simulate or emulate the functions of the human brain. The functions of a computer differ according to the

area of study. Prolog, for example, is a programming language that aims to understand human logic. It also applies mathematics in order to create systems that can discern relevant conclusions from a set of statements. Intelligent Agents is another example. Unlike traditional agents, Intelligent Agents are designed to take actions that are optimized to achieve a specific goal. Based on their perception of the environment and internal rules, intelligent agents make decisions (Cheng, 2021).

Artificial intelligence (AI) is quickly becoming a common tool for use in a wide number of industries, including business, finance, medicine and education. But the education industry still has some way to go before it has harnessed the full potential of AI. Ideas include using AI to make education more engaging and personalized, improve accessibility, complement individual learning styles, and enhance the learning experience for both the teacher and the student. In addition to improving the learning experience for students, AI could be used to help teachers save time and resources by automating tasks such as checking answer sheets and other administrative tasks (Gururaj, 2022).

Artificial intelligence (AI) has aroused a growing interest in education. Despite its relatively recent history, AI is increasingly being introduced into the classroom through different modalities, with the aim of improving student achievement (Garcia-Martinez, Fernández-Batanero, Cerero & Leon, 2023). With the advancement of Artificial Intelligence in the last couple of decades, it has become very much possible to assess each individual student's performance in advance and get a hint of his or her chances of success or failure (Dhara et al, 2022).

AI has the potential to positively impact students' academic activities by providing insights and interventions to improve their educational journey (SciSpace, 2022). Artificial intelligence (AI) systems offer effective support for online learning and teaching, including

personalizing learning for students, automating instructors' routine tasks, and powering adaptive assessments (Seo, et al, 2021). AI systems have been positively recognized for improving the quantity and quality of communication, for providing just-in-time, personalized support for large-scale settings, and for improving the feeling of connection, there were concerns about responsibility, agency, and surveillance issues (Seo, 2021).

2.3 Concept of Academic activities

Academic activities can be defined as the knowledge gained by the student which is assessed by marks by a teacher and/or educational goals set by students and teachers to be achieved over a specific period of time. The attainment of academic excellence of students through making them portray better academic activities is the foremost motive of academic institutions (Kumar, Agarwal & Agarwal, 2021). It is the key feature (Rono, Onderi & Owino, 2014) and one of the important goals (Narad and Abdullah, 2016) of education.

Academic activities is immensely significant for anyone who has a concern with education. In fact, academic activities can be understood as the nucleus, around which a whole lot of significant components of education system revolve, which is why the academic activities of students, specifically belonging to Higher Education Institutions (HEIs), has been the area of interest among researchers, parents, policy framers and planners.

Narad and Abdullah (2016) opined that since a sound academic activities is considered as a pre-requisite for securing good jobs, a better career and subsequently a quality life, significance of the students' academic activities is immense. Although it may seem to be a simple outcome of education, but the impact of academic activities of students in any nation is multi-faceted. Narad and Abdullah (2016) mentioned in their research noted that at the basic level, the success or failure of any academic institution depends largely upon the

academic activities of its students. They also reiterated the general belief that good academic activities signals better career prospects and thus a secure future.

The academic activities of students is immensely significant as the economic as well as the social development of any country are both attributable to the academic activities of the students. The better the students perform academically, the better are the prospects of the development of a quality manpower, who will contribute to the economic and social development of the nation (Kumar, Agarwal & Agarwal, 2021). Students performing better than the expectations and norms set by the society are mostly expected to contribute to the growth, development and sustainability of the society (Akinleke, 2017).

Singh, Malik and Singh (2016) presented a straight and significant connect between academic activities of students and the socio-economic development of a country, because acquisition of relevant knowledge as well as skill development become evident through students' academic activities. This accords a great reason to educators granting the highest priority to the academic activities of their students.

2.4 Impacts of AI on Academic activities

Jimbo-Santana, Lanzarini, Jimbo-Santana and Morales-Morales (2023) studied the analysis of AI tools on the academic activities of students in higher education institutions. The objective of their study was to perform a systematic review of the literature, considering the research that has been developed using artificial intelligence techniques to analyze academic activities in higher education institutions. The scientific databases Web of Science, Scopus, and IEEE Xplore were considered. Keywords related to artificial intelligence and academic activities were considered.

Articles pubcomputer sciencehed from January 2017 to December 2022 were taken into account, 1427 manuscripts were obtained, from which 74 were selected and analyzed,

according to the predefined inclusion and exclusion criteria. The results obtained indicated that the most used techniques for the prediction of academic activities are: neural networks and decision trees. In conclusion, it can be indicated that the application of artificial intelligence can improve the efficiency and accuracy of the evaluation, and provide valuable information for decision making and improvement of the quality of education.

Garcia-Martinez, Fernández-Batanero, Cerero and Leon (2023) quantitatively and qualitatively analysed the impact of AI components and computational sciences on student performance. A systematic review and meta-analysis were carried out in WOS and Scopus databases. After applying the inclusion and exclusion criteria, the sample was set at 25 articles. The results support the positive impact that AI and computational sciences have on student performance, finding a rise in their attitude towards learning and their motivation, especially in the STEM (Science, Technology, Engineering, and Mathematics) areas. Despite the multiple benefits provided, the implementation of these technologies in instructional processes involves a great educational and ethical challenge for teachers in relation to their design and implementation, which requires further analysis from the educational research.

Seo et al (2021) conducted a study on identifying how students and instructors perceive the impact of AI systems on their interaction in order to identify the gaps, challenges, or barriers preventing AI systems from achieving students' intended potential and risking the safety of their interactions. To address this need for forward-looking decisions, they used Speed Dating with storyboards to analyze the authentic voices of 12 students and 11 instructors on diverse use cases of possible AI systems in online learning. Findings show that participants envision adopting AI systems in online learning can enable personalized learner–instructor interaction at scale but at the risk of violating social boundaries.

2.5 Some AIs Used for Academic Purposes

There are many AIs used for academic purposes and the computer sciencet grows longer every day. Here are just a few:

ChatGPT: This is a computer program that is designed to understand and respond to human language in a natural and human-like way. Think of it like a virtual assistant or a chatbot that can understand and respond to written or spoken language. It's been trained on a large dataset of text from the internet and it can be used for a variety of tasks such as answering questions, translating languages, and even writing creative text. For example, it could be used in education to create an intelligent tutoring system that can understand and respond to student inquiries, or in customer service to help people with their questions.

Cram101: AI technology that can "turn any textbook into a smart study guide complete with chapter summaries, unlimited true-false and multiple choice practice tests and flashcards all drilled down to a specific textbook, ISBN number, author and chapter.

JustTheFacts101: intended to function as the AI equivalent of an old-fashioned yellow marker, instantly highlighting and generating book and chapter-specific summaries (University of San Diego, 2023).

Dualingo: This leveraged AI to deliver highly-personalized language lessons, affordable and accessible Engcomputer scienceh proficiency testing, and more. Their mission is to make high-quality education available to everyone in the world through advanced AI technology. They take advantage of GPT-4, the newest technology from OpenAI, to make learning with Duolingo even more powerful (Dualingo Team, 2022).

Thinkster Math: described by its creators as a "math tutoring program leverages human interaction and groundbreaking artificial intelligence to create personalized learning programs"

Jill Watson: an AI-enabled virtual teaching assistant introduced by the Georgia Institute of Technology in 2016

Brainly: a social media site for classroom questions

Nuance: speech recognition software used by students and faculty; capable of transcribing up to 160 words per minute; especially helpful for students who struggle with writing or have accessibility needs

Cognii: AI-based products, including a virtual learning assistant, for K-12 and higher education institutions, as well as corporate training organizations

KidSense: AI educational solutions designed for children, including a voice-to-text tool with algorithms built to recognize the sometimes harder-to-translate speech of young learners

Content Technologies: instructional design and content application solutions fueled by artificial intelligence research engines.

Palitt: This is built to help instructors easily create "your own custom lecture series, syllabus or textbook"

EssayWriters.ai: This is an all-in-one AI tool for tech-savvy students. It can generate essay prompts and outlines for free.

PaperWriter.ai: This is an AI-powered academic helper with a broad range of services, from college essays to literature reviews and personal statements.

Good-AI: This is a text generator that allows you to create 150-word essays and outlines for free.

SchoolHack.AI: This is a smart tool that functions like an AI tutor, answering students' questions about their subjects (John, 2022).

2.6 Methods of Using AI for Academic activities

One of the important aspects that needs to be taken into account in academic activities is that students need to possess constructive viewpoints in terms of various aspects of academics and overall educational situations (Kapur, 2021). When students experience any setbacks, they need to pay attention towards up-gradation of skills and abilities to overcome setbacks. The academic activities can be complicated as well as manageable. Kapur (2021) and Davis (2021) posited that the prevailing methods of using AI for academic activities are as follow:

Using AI for Class Assignments: After the teachers have imparted information among students in terms of academic subjects and lesson plans, they give class assignments to the students. The main objective of these assignments is to facilitate adequate understanding and clear all the doubts. The class assignments, which the students normally work on through making use of textbooks and other reading materials are also regarded as academic activities. The class assignments are carried out on an individual basis as well as in groups. In textbooks, at the end of lesson plans, there are exercises given (Chakraborty, 2018).

Using AI for Homework Assignments: The main objective of homework assignments is to facilitate adequate understanding in terms of academic subjects and lesson plans. When students experience any problems, they make note of them and discuss them with their teachers or classmates. As the name implies, homework assignments are the ones, which the students normally work on within their homes. The teachers work hard to impart understanding among students in terms of academic subjects (Davis, 2021).

Using AI for Projects and Reports: In educational institutions of all levels, the students are encouraged to work on projects and reports. The different topics are selected to work on them. The main objective of projects and reports is to facilitate adequate understanding of the academic subjects and achieve educational goals. These are carried out on an individual basis as well as in groups. The teachers give reasonable amount of time in completing these

assignments. The students are making use of technologies and various types of reading materials in the implementation of various types of projects and reports (Davis, 2021).

Using AI for Teamwork: The teamwork is encouraged among students by the teachers within the course of implementation of various assignments and projects. The students may carry them out on an individual basis and in teams. The team is formed of two or more individuals. When the individuals are working in a team, they are able to benefit to a major extent. The various benefits are, generating information in terms of various methods and approaches; exchanging ideas and viewpoints; alleviating work pressure; developing motivation towards the implementation of job duties; curbing the feelings of apprehensiveness and vulnerability; augmenting information regarding modern, technical and pioneering methods; providing solutions to various problems in an appropriate manner; forming sociable terms and relationships with others; carrying out job duties successfully and achieving educational goals in a well-ordered manner (Kapur, 2021).

Using AI for Debates: In educational institutions of all levels, the students are encouraged to participate in debates. Debates augment knowledge and abilities among students as well as hone their communication skills and interactive abilities. Within the classroom settings, the teachers give a topic to the students in which they are required to carry out a debate. In the debate, the students are given the opportunities to express their ideas and viewpoints. In some cases, the students may have same viewpoints, whereas, in other cases, they may have opposing viewpoints. The classmates need to form cordial and sociable terms and relationships with each other to achieve academic goals (Chakraborty, 2018). When they do not agree with each other regarding some concepts, they need to ensure, arguments and disagreements do not assume a major form. One of the important aspects that needs to be taken into account is, the communication processes need to take place in a polite and courteous manner.

Using AI for Role Playing: Role playing is the academic activity, which is usually carried out in the subjects of Engcomputer scienceh, Hindi and history. This academic activity is pleasurable and enjoyable to a major extent. In this academic activity, the students are required to assume the roles of characters. They are required to learn and memorise the dialogue and act out the play (Kapur, 2021). Within classroom settings, when the teachers have completed the lesson plans, they encourage role playing. In this case, the students may use their books and speak the dialogue through reading from the books. There are organization of competitions as well. In the competitions, the students have to be well-prepared. They are required to put on costumes and be well-dressed as the characters. The students, who carry out the job duties to their best abilities are rewarded. The students feel vulnerable and apprehensive as well in role playing. When they are well-prepared and have mastered the dialogues, they are able to overcome apprehensiveness and vulnerability. Therefore, role playing is the academic activity, which renders an important contribution in leading to up-gradation of the confidence levels among students.

Using AI for Group Discussions: In educational institutions of all levels, the students are encouraged to participate in group discussions. These contribute in augmenting knowledge among students and hone their communication skills and interactive abilities. Within the classroom settings, the teachers give a topic to the students in terms of which they carry out group discussions. The students are given the opportunities to express their ideas and viewpoints (Davis, 2021). In some cases, the students may have same viewpoints, whereas, in other cases, they may disagree with others. The classmates need to form pleasant and sociable terms and relationships with each other to do well in their studies. When they do not agree with each other regarding some concepts, they need to ensure, disagreements do not assume a major form. One of the important aspects that needs to be taken into account is, the interaction needs to take place in a well-mannered way (Kapur, 2021).

Using AI for Presentations: In educational institutions of all levels, the students need to pay attention towards honing of presentation skills. The presentations are made through making use of reading materials or Power Point slides. These are normally encouraged by the teachers to assess the academic activities of the students. The various factors that need to be taken into account to hone presentation skills are, being informative in terms of subjects and concepts; overcoming apprehensiveness and vulnerability; making use of language understandable to the audience; speaking clearly and fluently; honing technical skills, when Power Points are to be prepared; providing factual information; providing accurate answers to the questions put forward by audience; making use of polite language and decent words; maintaining eye contact with the audience; carrying out presentations within the required time and dressing neatly (Davis, 2021). The educators are vested with the responsibility of providing information to the students regarding these factors. Furthermore, they generate information in terms of them on their own as well. These factors need to be reinforced in leading to up-gradation of presentation skills. Therefore, presentations are regarded as an academic activity, which have proven to be meaningful and significant in achieving educational goals (Chakraborty, 2018).

Using AI for Quizzes: Quizzes are regarded as the academic activities that are organized by the teachers in educational institutions of all levels. These are put into practice to assess the academic activities of the students. The students are given time by the teachers to prepare themselves to participate in quizzes. The students normally feel apprehensive, when they are participating in quizzes. But when they devote sufficient amount of time towards their preparation, they are able to overcome apprehensiveness and vulnerability (Kapur, 2021). The educators are required to provide information to the students regarding the subjects and concepts in terms of which quizzes are to be put into operation. In some cases, the students are provided with the opportunities to make decisions regarding participation in quizzes.

Whereas, in other cases, it is compulsory for the students to participate in them. The internet and some social networking sites have proven to be indispensable in augmenting skills and in clearing the doubts.

Using AI for Tests and Exams: Tests and exams are regarded as the academic activities that are organized by the teachers in educational institutions of all levels. These are put into practice to assess the academic activities of the students. The students are given time by the teachers to prepare themselves to participate in these academic activities. The students normally feel apprehensive, when they are to take a test or at the time of exams. But when they devote sufficient amount of time towards their preparation, they are able to overcome apprehensiveness and vulnerability. In other words, they need to be well-prepared (Davis, 2021). The educators are required to provide information to the students regarding the subjects and concepts in an adequate manner. When the teaching methods are implemented well, the student learning will be promoted in a well-ordered manner. The participation of the students in tests and exams is mandatory. Therefore, tests and exams are regarded as the academic activities which have contributed in an effective manner in identifying the learning abilities among students (Kapur, 2021).

2.7 Benefits of AI to Academic activities

Artificial intelligence (AI) has the potential to revolutionize the way we think about education. From personalized learning algorithms to virtual and augmented reality, AI-powered tools and technologies are helping to enhance the learning experience for students in ways we never thought possible.

AI has the potential to provide a wide range of benefits for academic activities of students. One of the most significant is the ability to personalize each student's learning experience. With AI, educators can analyze student performance and preferences data to create

customized lesson plans and assessments that align with each student's unique strengths and weaknesses. Additionally, AI can automate administrative tasks such as grading, freeing up time for educators to focus on other important aspects of teaching.

AI-powered tools and technologies can also enhance the learning experience for students in a number of ways. For example, virtual and augmented reality can make learning more interactive and immersive, while chatbots and other AI-powered tools can provide 24/7 student support. Additionally, AI can be used to create personalized quizzes and games that help students to engage with the material in a fun and interactive way.

Personalized learning is one of the most exciting potential benefits of AI in education. With the ability to analyze data on student performance and preferences, AI can help educators to create customized lesson plans and assessments that align with each student's unique strengths and weaknesses. This can improve student experience and motivation, and ultimately lead to better academic outcomes.

AI can revolutionize academic research by processing and analyzing large amounts of data quickly, uncovering new discoveries, generating hypotheses and conducting literature reviews faster than traditional methods. ChatGPT can assist researchers in writing papers by providing feedback and suggestions, and even generate parts of the text. Additionally, it can be used in natural language processing such as text summarization, sentiment analysis, and language translation for analyzing unstructured data (Perez, 2023).

With the help of various data mining techniques, institutions can gain knowledge of those factors and predict a student's performance in advance. Also, AI aids in assessing student involvement in a particular course. This helps the institution in clustering students into various groups according to their performance levels and identifies the most talented and success-prone students as well as relatively weaker students.

With this identification, it becomes possible to take special care of students to improve their performance. Various AI-aided tools can be deployed in taking individual care of a student. Various recommendation systems can assign personalized learning curricula to students according to their needs and intelligence level. Personalized and customized course styling can be individually adapted as per the student's interest. This not only helps improve a student's performance; it also helps in preventing dropouts and attracting more and more students towards higher education, in turn building the youth of a nation (Dhara et al., 2022).

2.8 Challenges Faced by Students When Using AI for Academic Purposes

While the opportunities for AI are promising, the impact of AI systems on the culture of, norms in, and expectations about interactions between students and instructors are still elusive (Seo, et al, 2021) because most students are not aware of the AIs they can use for academic purposes, poor Internet connectivity, technophobia, epileptic power supply and most AI tools generate irrelevant academic contents. Along with these potential benefits come some difficult challenges and risks the education community must navigate:

Student cheating: Students might use AI to solve homework problems or take quizzes. AI-generated essays threaten to undermine learning as well as the college-entrance process. Aside from the ethical issues involved in such cheating, students who use AI to do their work for them may not be learning the content and skills they need.

Bias in AI algorithms: AI systems learn from the data they are trained on. If this data contains biases, those biases can be learned and perpetuated by the AI system. For example, if the data include student-performance information that's biased toward one ethnicity, gender, or socioeconomic segment, the AI system could learn to favor students from that group. Less cited but still important are potential biases around political ideology and

possibly even pedagogical philosophy that may generate responses not aligned to a community's values.

Privacy concerns: When students or educators interact with generative-AI tools, their conversations and personal information might be stored and analyzed, posing a risk to their privacy. With public AI systems, educators should refrain from inputting or exposing sensitive details about themselves, their colleagues, or their students, including but not limited to private communications, personally identifiable information, health records, academic activities, emotional well-being, and financial information.

Decreased social connection: There is a risk that more time spent using AI systems will come at the cost of less student interaction with both educators and classmates. Children may also begin turning to these conversational AI systems in place of their friends. As a result, AI could intensify and worsen the public health crisis of loneliness, isolation, and lack of connection identified by the U.S. Surgeon General.

Overreliance on technology: Both teachers and students face the risk of becoming overly reliant on AI-driven technology. For students, this could stifle learning, especially the development of critical thinking. This challenge extends to educators as well. While AI can expedite lesson-plan generation, speed does not equate to quality. Teachers may be tempted to accept the initial AI-generated content rather than devote time to reviewing and refining it for optimal educational value.

Equity issues: Not all students have equal access to computer devices and the Internet. That imbalance could accelerate a widening of the achievement gap between students from different socioeconomic backgrounds (Bailey, 2022).

2.9 Summary of the Literature Reviewed

This chapter has affirmed that AI is a modern technological device that has revolutionized human activities. With a focus on academic activitiess, this chapter has revealed some impacts of AI on academic activitiess of students and also outlined some AI used for academic purposes. Furthermore, it explains some methods of using AI for academic activities before juxtaposing the benefits of AI to academic activities. Finally, it reviewed the challenges faced by students when using AI for academic purposes.

CHAPTER THREE

METHODOLOGY

3.1 Research Design

Research design is to indicate the ways to be followed or patterns of how the study will be conducted. Descriptive survey method will be adopted for this study. The reason for adopting descriptive survey is because the respondents are students of Computer Science, Kwara State Polytechnic, Ilorin, whose opinions on the impacts of artificial intelligence on their academic activities will be understudied.

3.2 Population of the Study

Population is the total area, environment, scope or aspect a study is expected to cover. According to Issa (2012), population of a study is referred to as all the members or elements of a particular group of people, animals, or things in a defined area. Hence, the population of this study are 3659 students of Computer Science, Kwara State Polytechnic, Ilorin.

3.3 Sample and Sampling Techniques

Sample is the unit, portion or element of the population, which will provide data that are relevant to the study. In this study, sample size will be determined by Taro Yamane which was calculated in the order below:

Population: 3659

Confidence level: 93%

Margin error: 0.07

Population proportion: 70

Sample size = 217 respondents.

However, simple random sampling technique would be used for this study. The reason for the choice of simple random sampling is because it allows the researcher to give every computer science student in the population equal chance of being chosen and included in the sample.

3.4 Instrument for Data Collection

This study adopted questionnaire and interview as its data collection instrument. The questionnaire, according to Issa (2012) is a data collection instrument containing series of questions and other prompt responses for the purpose of gathering information from respondents. The questionnaire, titled ***"Utilisation of Artificial Intelligence for Academic Activities by Computer Science Students of Kwara State Polytechnic, Ilorin, Nigeria"*** will be arranged into two major sections. The first section was meant for respondents' demographic data, while the second section will be dedicated to obtaining data on the problem being understudied.

3.5 Validity and Reliability of the Instrument

Validity refers to the level at which an instrument accurately measures what it intends to measure (Li, 2016). The questionnaire will be given to two subject experts for assessment of the quality of presentation of the contents of the variables the researcher wishes to measure. Their expert opinions will be effected before the questionnaire is presented to the supervisor for assessment and corrections before its onward distribution to users of the libraries understudy.

However, reliability refers to the levels at which an instrument yields consistent result. Internal consistency will be used to assess the extent of differences within the test items by exploring the same construct that produce similar results (Thomas, 2022).

3.6 Data Collection Procedure

The questionnaire will be administered to the respondents by the researcher and supported by a research assistant. The researcher will administer the questionnaire to respondents from HND II, while the research assistant will administer the questionnaire to respondents from HND I.

3.7 Method of Data Analysis

Data obtained was presented and analysed by using simple percentage and frequency table. The reason for the choice of simple percentage and frequency table is because it allows presentation, analysis and comparison of multiple attitude, opinion and ideas which can enhance easy comprehension of tables and the data they contained.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION

4.1 Presentation of Results

This chapter present, analyse, discuss, and interpret the data obtained from field with the aid of questionnaire. For the sake of clarity, this chapter is further arranged in the following order:

4.2 Questionnaire Distribution and Response Rate

4.3 Demographic Characteristics of Respondents

4.4 Analysis of Data and Discussion of Findings

4.2 Questionnaire Distribution and Response Rate

From the 217 copies of questionnaires administered, only 183 were returned and out of the questionnaire returned, 157 were fully filled and adequate for analysis. Hence, the data of this study was valid for analysis with questionnaire response rate of 72.22%. According to Ramshaw (2021), questionnaire is suitable for analysis if the response rate is more than average for physically administered questionnaires and can be used to represent majority of the characteristics intended to describe by the researcher.

4.3 Demographic Characteristics of Respondents

Table 1: Respondents' Demographic Distribution

Statements		F	%
Gender	Male	64	40.8
	Female	93	59.2
	Total	**157**	**100**
Marital status	Single	147	93.6
	Married	10	6.4
	Divorced	0	0.0
	Widow	0	0.0
	Total	**157**	**100**
Age range	15-19 years	53	33.8
	20-24 years	77	49.0
	25-29 years	13	8.3
	30-34 years	14	8.9
	35 years and above	0	0.0
	Total	**157**	**100**
Academic level	ND I FT/PT	14	8.9
	ND II FT/PT	58	36.9
	HND I	18	11.5
	HND II	67	42.7
	Total	**157**	**100**

Table 1 shows that female respondents constitute the majority with 59.2%, while the males have 40.8%. Also, 93.6% of the respondents are single, while 6.4% are married. More so, 49.0% are within the age range of 20 – 24 years, followed by 15 – 19 years with 33.8%, 30 – 34 years have 8.9%, while 25 – 29 years have 8.3%. Finally, 42.7% of the respondents are in HND II, 36.9% are in ND II FT/PT, 11.5% are in HND I, while only 8.9% are in ND I FT/PT.

The results of the Table indicated some variables worthy to be discussed and explained. Noting that majority of the respondents (72.8%) are within the age ranges 15 – 24 years implies that the findings of this study on demographic information is consistent with the belief that most students undertaken their first degrees are somewhat around 25 years or below 30 years. Also, discovering that the HND II students highly participated in this study is a welcome development because their opinions are expected to reflect high experience of usage of AI for academic activities.\

4.4 Data Analysis

4.4.1 Research Question 1: What is the level of impact of AI on academic activities of students of computer science, Kwara State Polytechnic, Ilorin?

Table 2: Level of impact of AI on academic activities of students

Items	VH		H		M		L		M	SD
	F	%	F	%	F	%	F	%		
Impacts the efficiency of carrying out my academic tasks	40	25.5	90	57.3	14	8.9	13	8.3	3.00	0.82
Improves the accuracy of evaluating my performances in academic tasks	44	28.0	87	55.4	13	8.3	13	8.3	3.03	0.84
Improves the quality of the academic information I have access to	54	34.4	77	49.0	14	8.9	12	7.6	3.10	0.86
Impacts my motivation towards learning	33	21.0	91	58.0	15	9.6	18	11.5	2.89	0.87
Impacts how I interact with my lecturers/instructors	29	18.5	89	56.7	20	12.7	19	12.1	2.82	0.88
Helps me generate academic contents	50	31.8	85	54.1	11	7.0	11	7.0	3.11	0.81

Table 2 indicates that helps me generate academic contents is ranked highest with (3.11 ± 0.81) among the level of impact of AI on academic activities of students, followed by improves the quality of the academic information I have access to (3.10 ± 0.86), while impacts the efficiency of carrying out my academic tasks has (3.00 ± 0.82). However, 2.82 ± 0.88 for impacts how I interact with my lecturers/instructors is ranked lowest.

The implications of the findings of Table 3 are: Helps students generate academic contents, improves the quality of the academic information students have access to and impacts the efficiency of carrying out students' academic tasks have the very high impact on the students' academic activities. These findings are similar to the results of Table 2 that showed that improves the quality of the academic information students have access to, helps students generate academic contents and impacts the efficiency of carrying out students' academic tasks are the major impacts of AI on academic activities of the respondents.

However, the major difference of findings of Tables 2 and 3 are that helps students generate academic contents has a very high impact on the students' academic activities, while it was ranked third highest in Table 2. Also, impacts how students interact with their lecturers/instructors is ranked lowest in Table 3, whereas impacts students' motivation towards learning is ranked lowest in Table 2.

Above all, the implication of these findings is that AI has a very high impact on the academic activities of the respondents by helping them generating academic contents, improves the quality of academic information students have access to and impacts the efficiency of carrying out students' academic tasks. This aligns with the views of Gururaj (2022) that AI is quickly becoming a common tool for use in a wide number of industries, including business, finance, medicine and education. Its use for academic purposes makes academic activities more engaging and personalized, improve accessibility, complement individual learning styles and enhance the learning experience for both the teacher and the student.

4.4.3 Research Question 3: What are the methods adopted in using AI for academic activities of students of computer science, Kwara State Polytechnic, Ilorin?

Table 4: Methods adopted in using AI for academic activities of students

Items	SA		A		D		SD		M	SD
	F	%	F	%	F	%	F	%		
Using AI for class assignments	57	36.3	84	53.5	8	5.1	8	5.1	3.21	0.76
Using AI for homework assignments	50	31.8	85	54.1	11	7.0	11	7.0	3.11	0.81
Using AI for projects and reports	39	24.8	90	57.3	14	8.9	14	8.9	2.98	0.84
Using AI for teamwork	30	19.1	85	54.1	22	14.0	20	12.7	2.80	0.90
Using AI for debates	27	17.2	94	59.9	23	14.6	13	8.3	2.86	0.80
Using AI for role playing	27	17.2	88	56.1	20	12.7	22	14.0	2.76	0.90
Using AI for group discussions	21	13.4	96	61.1	20	12.7	20	12.7	2.75	0.85
Using AI for presentations	47	29.9	88	56.1	11	7.0	11	7.0	3.09	0.80
Using AI for quizzes	29	18.5	88	56.1	21	13.4	19	12.1	2.81	0.88
Using AI for tests and exams	19	12.1	88	56.1	21	13.4	29	18.5	2.62	0.92

Table 4 shows that using AI for class assignments is ranked highest with (3.21 ± 0.76) among the methods adopted in using AI for academic activities of students, followed by using AI for homework assignments (3.11 ± 0.81), while using AI for presentations has (3.09 ± 0.80). However, 2.62 ± 0.92 for using AI for tests and exams is ranked lowest.

The import of the findings of this Table is that majority of the respondents are using AI for class assignments, homework assignments and presentation. According to John (2022), AI has revolutionized academic activities by allowing students carrying out their assignments and prepare academic contents with no stress. Some of the AI tools students can use for academic purposes include PaperWriter.ai, EssayWriters.ai, Good-AI, SchoolHack.AI and Palitt.

This further affirm the claim of the respondents on using AI for assignments and presentations. The use of AI allows students to work through making use of textbooks and other reading materials that can enhance their academic activities. Assignments may be carried out on an individual basis as well as in groups. AI makes it easier for students to use textbooks at the end of lesson plans (Chakraborty, 2018).

Finally, the meager use of AI for tests and examinations among the respondents is not surprising because tests and examinations are ought to be conducted under controlled environments where no electronic tools or devices would be acceptable. Thus, any attempt by the students would amount to malpractices.

4.4.4 Research Question 4: What are the challenges faced in using artificial intelligence for academic activities of computer science, Kwara State Polytechnic, Ilorin?

Table 5: Challenges faced in using artificial intelligence for academic activities of students

Items	SA		A		D		SD		M	SD
	F	%	F	%	F	%	F	%		
I am not aware of the AIs I can use for academic purposes	21	13.4	94	59.9	21	13.4	21	13.4	2.73	0.86
Poor Internet connectivity	50	31.8	85	54.1	11	7.0	11	7.0	3.11	0.81
Fear of using AIs	55	35.0	76	48.4	13	8.3	13	8.3	3.10	0.87
Most AI tools generate irrelevant academic contents	40	25.5	89	56.7	14	8.9	14	8.9	2.99	0.84
Students cheat with AIs	43	27.4	88	56.1	13	8.3	13	8.3	3.03	0.83
Bias in AI algorithms	23	14.6	91	58.0	19	12.1	24	15.3	2.72	0.90
Privacy concerns	27	17.2	89	56.7	21	13.4	20	12.7	2.78	0.88
Decreased social connection	23	14.6	84	53.5	22	14.0	28	17.8	2.65	0.94
Overreliance on technology	54	34.4	73	46.5	15	9.6	15	9.6	3.06	0.91
Equity issues	20	12.7	92	58.6	23	14.6	22	14.0	2.70	0.87

Table 5 reveals that poor Internet connectivity is ranked highest with (3.11 ± 0.81) among the challenges faced in using artificial intelligence for academic activities of students, followed by fear of using AIs (3.10 ± 0.87), overreliance on technology has (3.06 ± 0.91) and students cheat with AI (3.03 ± 0.83). However, 2.65 ± 0.94 for decreased social connection is ranked lowest.

The findings of the Table make us understand that poor Internet connectivity, fear of using AI, overreliance on technology and students cheat with AI are the major challenges faced by the respondents when using AI for academic activities. This corroborates the point of Seo, et al. (2021) that poor Internet connectivity, technophobia, epileptic power supply and most AI tools generate irrelevant academic contents are major challenges to the use of AI for academic purposes among the students.

The results revealing that students cheat with AI aligns with the view of Bailey (2022) that students might use AI to solve homework problems or take quizzes. AI-generated essays threaten to undermine learning as well as the college-entrance process. Aside from the ethical issues involved in such cheating, students who use AI to do their work for them may not be learning the content and skills they need.

Noting that the AI decreased social connection has the least rank among the responses of the students is worth discussing. This contrasts the views of Dhara et al. (2022); Bailey (2022) and Seo et al. (2022) that there is a risk that more time spent using AI systems will come at the cost of less student interaction with both educators and classmates. Children may also begin turning to these conversational AI systems in place of their friends. As a result, AI could intensify and worsen the public health crisis of loneliness, isolation, and lack of connection identified by the U.S. Surgeon General.

CHAPTER FIVE

SUMMARY OF THE FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Findings

Findings of this study revealed that most of the students in Computer Science, Kwara State Polytechnic, Ilorin, are females. Also, most of the respondents are single with the highest age range around 20 – 24 years and in HND II. It was also discovered that the use of AI for academic purposes impacts the students' academic activities by improving the quality of the academic information students have access to, helping students generate academic contents and impacting the efficiency of carrying out students' academic tasks.

This study further revealed helping students generate academic contents, improving the quality of the academic information students have access to and impacting the efficiency of carrying out students' academic tasks have the very high impact on the students' academic activities. More so, most of the students use AI for assignments, homework and presentations.

Most of the students can't use AI for academic purposes because of poor Internet connectivity, fear of using AI, overreliance on technology and students cheat with AI. Finally, most of the students believed that the solutions to their challenges are orientations should be made to students on different AIs they can use for academic purposes, developers of AIs should prioritise protecting the privacy of students using AIs and students should be taught the skills and competences needed to use AIs for their academic purposes.

5.2 Conclusion

AI is an emerging method of creating and utilising contents with the aid of machines having the replica of human intelligence. Its effect has been felt in every dimension of human life, including education. Academic activities is the overall grade or remark earned by students as rewards for their involvement in academic activities. This study validates the impacts of AI on academic activities of Computer Science students, Kwara State Polytechnic, Ilorin, by showing that AI helps students generate academic contents, improves the quality of the academic information students have access to and impacts the efficiency of carrying out

students' academic tasks. This makes the students use AI for assignments, homework and presentations. But the students use of AI for academic purposes can't be maximised because of poor Internet connectivity, fear of using AI, overreliance on technology and cheating with AI.

5.3 Recommendations

The following suggested recommendations are hereby made for this study:

1. Management of Kwara State Polytechnic, Ilorin, should organise orientation programmes for their students on the use of AI for academic purposes. This will serve as the Management's response to the call of AI Literacy as it is been advocated for in the developed world.
2. Management of Kwara State Polytechnic, Ilorin, should conduct cyber security training for their students. This will expose the students to the strategies they can use to protect their data when using AI for academic purposes.
3. Management of Kwara State Polytechnic, Ilorin, and other stakeholders should ensure the provision of reliable Internet connectivity in the campus and other areas where the students reside. Access to reliable bandwidth would increase the students' confidence in using AI for academic activities.
4. Students of Computer Science should be discouraged from cheating with AI. This would reduce their overreliance on technology and help them develop their intellects as needed for the development of scholarships in the contemporary world.

References

Ramshaw, A. (2021). The Complete Guide to Acceptable Survey Response Rates. https://www.genroe.com/blog/acceptable-survey-response-rate-2/11504.

Abaidoo, A. (2018). Factors contributing to academic activities of students in a Junior High School. Munich: GRIN Verlag. https://www.grin.com/document/450284

Aderounmu, B. (2022). The cons of social media may outweigh the pros in Nigeria (1). https://businessday.ng/opinion/article/the-cons-of-social-media-may-outweigh-the-pros-in-nigeria-1/

Andrew, M. (2017). Dean of Computer science at Carnegie Mellon University, Interview with FORBES Review.

Baum, H. (2021). An introduction to artificial intelligence. United States of America: Oxford University.

De Felice, F., Petrillo, A. & Zomparelli, F., (2018). Prospective design of smart manufacturing: An Italian pilot case study. *Manufacturing Letters*, 15, pp. 81-85.

Gupta, N. (2017). A Literature Survey on Artificial Intelligence. *International Journal of Engineering Research & Technology (IJERT)*, 2(3), 46-61.

Khan, A., Iqbal, M. & Tasneem, N. (2015). Influence of age of students on their academic activities: A review. *Journal of Education, Technology and Science*, 3(5), 112 – 124.

Kumar M (2018). Is human being the most intelligent and wise among living beings. Research Gate. Retrived from www. researchgate.net/post

Narad, A. & Abdullah, M. (2016). Psychological factors limiting academic achievement of students in tertiary institutions. *Int J Eval Res Educ.,* 8(2), 285–297.

Robinson, R.N. (2018). Artificial intelligence: Its importance, challenges and applications in Nigeria. *Direct Research Journal of Engineering and Information Technology*, Vol.5 (5), 36-41, DOI: https://doi.org/10.26765/DRJEIT.2018.4780

Rono, K., Onderi, H., &Owino, J. (2014). Perceptions of causes of poor academic activities amongst selected secondary schools in Kericho Sub-County: Implications for school management.

Singh, M., Malik, H. & Singh, U. (2016). Assessment of factors influencing academic activities of students in Pakistan. *Education Management Technology*, 4(6), 234 – 244.

Tentama, F. & Abdillah, M.H. (2019). Student employability examined from academic achievement and self-concept. *Int J Eval Res Educ.,* 8(2), 243–248.

Travaglioni, M., Petrillo, A., De Felice, F., Cioffi, R. & Piscitelli, G. (2020). Artificial intelligence and machine learning applications in smart production: Progress, trends and directions. *Sustainability Journal*, 12, 1-24. doi:10.20944/preprints201912.0016.v1

Akinleke, W. O. (2017). Impact of family structure on the academic activities of secondary school students in Yewa local government area of Ogun State, Nigeria. *International Journal of Sociology and Anthropology Research*, 3(1), 1-10.

Bailey, J. (2023). AI in Education. *Technology*, 23(4), 23-39.

Chakraborty, A. (2018). Importance of Academic Writing. Retrieved November 18, 2021 from isessay.com.

Cheng, Y. (2021). Improving students' academic activities with AI and semantic technologies. Australia: The Australian National University. arXiv:2206.03213v2

Davis, B. (2021). What is the meaning of academic text? MVOrganizing.

Dhara, S., Chatterjee, S., Chaudhuri, R., Goswami, A. & Ghosh, S.K. (2022). Artificial intelligence in assessment of students' performance. https://www.researchgate.net/publication/361861919

Dualingo Team (2023). Introducing Duolingo max, a learning experience powered by GPT-4. https://blog.duolingo.com/duolingo-max/

Garcia-Martinez, I., Fernández-Batanero, J.M., Fernandez-Cerero, J. & Leon, S.P. (2023). Analysing the impact of artificial intelligence and computational sciences on student performance: Systematic review and meta-analysis. *Journal of New Approaches in Educational Research*, 12(1), https://doi.org/10.7821/naer.2023.1.1240.

Gururaj, T. (2022). 10 examples of how artificial intelligence is improving education. https://interestingengineering.com/computer sciencets/examples-how-artificial-intelligence-improving-education

Jimbo-Santana, P., Lanzarini, LC., Jimbo-Santana, M. & Morales-Morales, M. (2023). Artificial intelligence for analyzing academic activities in higher education institutions. A

John, S. (2022). Artificial intelligence in education: Unlocking the potential of AI for academic growth. https://essaypro.com/blog/research-on-ai-powered-academic-performance.

Kapur, R. (2021). Understanding the significance of academic activities and fieldwork in the acquisition of education: A systematic literature review. *Revista Cátedra*, 6(2), 30-51.

Kumar, S., Agarwal, M. & Agarwal, N. (2021). Defining and measuring academic activities of HEIs Students: A Critical Review. *Turkish Journal of Computer and Mathematics Education*, Vol.12 No.6, 3091-3105.

Narad, A., & Abdullah, B. (2016). Academic activities of senior secondary school students: Influence of parental encouragement and school environment. Rupkatha *Journal on Interdisciplinary Studies in Humanities Special Issue*, 3(2), 12-19.

Perez, J. (2023). Artificial intelligence (AI) in education: Impact & examples. https://www.questionpro.com/blog/ai-in-education/#:~:text=

Rono, K., Onderi, H., & Owino, J. (2014). Perceptions of causes of poor academic activities amongst selected secondary schools in Kericho sub-county: Implications for school management. Journal of Business Education, 45(3), 1-14.

SciSpace (2022). How Artificial intelligence affects students academic activities? https://typeset.io/questions/how-artificial-intelligence-affects-students-academic-820d8d9f-3570-17de-ee34-103a8956afca

Seo, K., Tang, J., Roll, I., Fels, S. & Yoon, D. (2021). The impact of artificial intelligence on learner–instructor interaction in online learning. *International Journal of Educational Technology in Higher Education*, 18(54), 25-41.

Singh, S. P., Malik, S., & Singh, P. (2016). Research paper factors affecting academic activities of students. *Indian Journal of Research*, 5(4), 176-178.

University of San Diego (2023). 43 examples of artificial intelligence in Education. https://onlinedegrees.sandiego.edu/artificial-intelligence-education/

Issa, A. O. (2012). Practical guides to project writing for students in Polytechnics, Colleges and Universities. Offa: Wunmi Commercial Press.

Kolawole, A. A. and Ijiebor, J. A. (2018). A guide for researchers and writers of term papers. Offa: Correctman Press Limited.

QUESTIONNAIRE
KWARA STATE POLYTECHNIC, ILORIN
INSTITUTE OF INFORMATION AND COMMUNICATION TECHNOLOGY
DEPARTMENT OF LIBRARY AND INFORMATION SCIENCE

Dear Respondent,
I am an ND II student of the above-mentioned institution currently undertaking a research titled: ***"Uticomputer scienceation of Artificial Intelligence for Academic Activities by Computer Science Students of Kwara State Polytechnic, Ilorin, Nigeria."*** This questionnaire is meant to solicit unbiased response from you. Since it is for research purpose, your response will be treated with utmost confidentiality. Hence, your immense contributions to the success of this study will be greatly appreciated.

Yours faithfully,

……..

RESEARCHER

Section A: Demographic Information of Respondents
Kindly select the option of your choice by ticking from the answers below

1. Gender: Male ( ) Female ( )
2. Marital Status: Single ( ) Married ( ) Divorced ( ) Widow ( )
3. Age range: 15 – 19 years ( ) 20 – 24 years ( ) 25 – 29 years ( )
   30 years and above ( )
4. Academic level: ND I FT/PT ( ) ND II FT/PT ( ) HND I ( ) HND II ( )

Section B
Kindly tick SA for "Strongly Agree," A for "Agree," D for "Disagree" and SD for "Strongly Disagree."
Research Question 5: What are the impacts of artificial intelligence on academic activities of students of computer science, Kwara State Polytechnic, Ilorin?

S/No	Statements	SA	A	D	SD
1.	Impacts the efficiency of carrying out my academic tasks				
2.	Improves the accuracy of evaluating my performances in academic tasks				
3.	Improves the quality of the academic information I have access to				

4.	Impacts my motivation towards learning				
5.	Impacts how I interact with my lecturers/instructors				
6.	Helps me generate academic contents				
	Others, please specify……..				

Kindly tick VH for "Very High," H for "H," M for "Moderate" and L for "Low"

Research Question 5: What is the level of impact of artificial intelligence on academic activities of students of computer science, Kwara State Polytechnic, Ilorin?

S/No	Statements	VH	H	M	L
1.	Impacts the efficiency of carrying out my academic tasks				
2.	Improves the accuracy of evaluating my performances in academic tasks				
3.	Improves the quality of the academic information I have access to				
4.	Impacts my motivation towards learning				
5.	Impacts how I interact with my lecturers/instructors				
6.	Helps me generate academic contents				
	Others, please specify……				

Research Question 6: What are the methods adopted in using artificial intelligence for academic activities of students of computer science, Kwara State Polytechnic, Ilorin?

S/No	Statements	SA	A	D	SD
1.	Using AI for class assignments				
2.	Using AI for homework assignments				
3.	Using AI for projects and reports				
4.	Using AI for teamwork				
5.	Using AI for debates				
6.	Using AI for role playing				
7.	Using AI for group discussions				
8.	Using AI for presentations				

9.	Using AI for quizzes				
10.	Using AI for tests and exams				
	Others, please specify…….				

Research Question 7: What are the challenges faced in using artificial intelligence for academic activities of computer science, Kwara State Polytechnic, Ilorin?

S/No	Statements	SA	A	D	SD
1.	I am not aware of the AIs I can use for academic purposes				
2.	Poor Internet connectivity				
3.	Fear of using Ais				
4.	Most AI tools generate irrelevant academic contents				
5.	Students cheat with AIs				
6.	Bias in AI algorithms				
7.	Privacy concerns				
8.	Decreased social connection				
9.	Overreliance on technology				
10.	Equity issues				
	Others, please specify……				