



Awareness and utilization of artificial intelligence among full-time students of literature at Kwame Nkrumah University in Zambia

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ABSTRACT

This study explores the awareness and utilization of Artificial Intelligence (AI) among full-time students of Literature at Kwame Nkrumah University (KNU) in Zambia. Through in-depth interviews and thematic analysis, the research investigates the students' familiarity with AI concepts, their perceptions of AI's relevance to the field of Literature, and the extent to which AI tools are integrated into their academic pursuits. Employing a qualitative approach, the study gathered and analyzed data through interviews with 30 purposefully selected participants supplemented by questionnaires distributed to 20 randomly selected students. A total of 50 3rd and 4th year students of Literature were targeted. The objectives of the study were to establish the awareness levels of AI among full-time students of Literature at KNU, to examine the perceptions/attitudes of full-time students of Literature at KNU, to identify the challenges and benefits of using AI in a Literature-based educational setting and to determine the extent to which AI is being used by the full-time students of Literature at KNU. The study employed a descriptive thematic analysis to make interpretations or meanings of the data. The study revealed that AI enhanced students' analysis and understanding literary works, majority were exposed to and familiar with AI among other findings. Findings from selected students of Literature offer insights into their perceptions of AI's role in literary analysis, research, and creative processes. Ultimately, this research contributes to the broader discourse on the intersection of AI and the humanities, highlighting its implications for pedagogy and scholarly engagement.

Keywords: Artificial Intelligence, awareness, utilization, literature students, Kwame Nkrumah University, Zambia

INTRODUCTION

The paper presents the adaptability of new technological applications and concepts such as Artificial Intelligence (henceforth AI) in teaching and learning in higher learning institutions in Zambia. The paper aims to ascertain whether AI has been adopted among full-time students of Literature at Kwame Nkrumah University.

Artificial Intelligence (AI) is used as an umbrella term for several related technologies including but not confined to, classical machine learning, deep learning, robotics, and natural language processing

(NLP) (O'Dea & O'Dea, 2023). The above definition is consistent with UNICEF (2021) which opines that AI refers to machine-based systems that can, given a set of human-defined objectives, make predictions,

recommendations, or decisions that influence real or virtual environments. The above definitions entail that AI systems interact with human beings and act on their environment, either directly or indirectly for the successful implementation of the technology. Often, human beings and AI systems appear to operate autonomously and can adapt their behavior by learning about the context.

The Council of Europe (2019) complements the definition of Artificial Intelligence by stating that it is a set of sciences, theories, and techniques whose purpose is to produce using a machine the intellectual abilities of a human being. This entails that AI demands entrusting a machine with complex tasks that should be accomplished by human beings.

Eager & Brunton (2023) observe that with the advent of ChatGPT, the applicability of AI has become popular in everyday media and educational settings. It is envisaged that AI techniques enable computers to learn and perform human-like cognitive tasks, such as predictions, and decision-making through processing and analyzing very large amounts of data (Holzinger et al., 2019). This entails that AI is now widely used in major industries, such as manufacturing, supply chain management, banking, and financial services.

It suffices to say in higher education, AI is becoming a more important research area with increasing developments and applications of AI within the wider society. However, studies such as O'Dea & O'Dea (2023) reveal that AI-based tools have not yet been widely adopted in higher learning institutions. This finding is a motivation for the present documentation to investigate the availability of AI-based tools and their adoption by students of Literature at Kwame Nkrumah University. Based on the above literature, there is a lack of sound evidence available on the pedagogical impact of AI on learning and teaching in higher education (O'Dea & O'Dea, 2023).

Given the above literature, the current study set out to establish the adoption of AI among full-time students of Literature at Kwame Nkrumah University. It is hoped that the findings of this study will be cardinal in developing dedicated AI adoption strategies at the institutional level, updating the existing technology infrastructure, and upskilling academic tutors for AI.

Based on the students of Literature's attitudes, knowledge, and utilization of AI-based tools, the aim of this article is to explore the awareness and utilization of Artificial Intelligence (AI) among full-time students of Literature at Kwame Nkrumah University in Zambia. Therefore, the research questions guiding this study are: 1. how does the incorporation of Artificial Intelligence tools impact the literary analysis, research, and creative processes of full-time Literature students at Kwame Nkrumah University in Zambia, and 2. what are the perceived challenges and benefits associated with the utilization of AI in a Literature-based educational setting?" The paper progresses as follows: introduction, literature review, methodology, presentation and discussion of findings, and conclusion.

LITERATURE REVIEW

According to UNESCO (2023), Generative Artificial Intelligence (GenAI) burst into the public awareness in late 2022 with the launch of ChatGPT. Literature shows that with the power to imitate human capabilities to produce outputs such as text, images, videos, music and software codes, GenAI applications have caused a stir. Studies have revealed that millions of people are now using GenAI in their daily lives and the potential of adapting the models to domain-specific AI applications seems unlimited. This shows that wide-ranging capacities for information processing and knowledge production have potentially huge implications for education, as they replicate the higher-order thinking that constitutes the foundation of human learning. As GenAI tools are increasingly able to automate some basic levels of writing and artwork creation,

they are forcing education policy-makers and institutions to revisit why, what and how people such as students learn.

Literature shows that several studies have been conducted on the concept of AI in primary, secondary, and higher education. Jain & Jain (2019) conducted a study to find out how the concept of artificial intelligence can be applied in teaching and learning in higher education and the impacts of using AI in higher education. The duo documents that artificial intelligence (AI) is gaining significance in all sectors of the economy as well as in higher education which is the focus of this paper. The study examined the learning implications of evolving technologies such as AI and how they influence learning and teaching in higher education. The study reveals that AI gives opportunities for higher education services to become easily accessible at an extraordinary speed, not only inside the class but also outside the classroom.

It is envisaged that various examinations during studies have revealed that jobs that include routine tasks and other organized tasks are simpler to computerize and will be supplanted by AI soon. This shows that AI-based tools have the potential to affect educational plans in advanced education (Jain & Jain, 2019). Results of the above study also show that implementing AI in higher education institutes is likely to enhance the learning capacities of students to a large extent. It can be argued that AI holds massive prospects in the higher education sector.

Roy et al., (2022) state that technology adoption is accepting, integrating, and using the latest innovative technologies in society. This entails that the concept and technology of Artificial intelligence (AI) and robotics are changing the face of the industrial and service sectors. This shows that there is a need to change the traditional way of teaching by introducing the latest innovative methods such as AI. The study aimed to measure the intention of adopting AI-based robots in the educational system of Indian

universities. This study is related to the present article whose aim is to assess the adoption of AI among full-time students of Literature at Kwame Nkrumah University as well as to establish the challenges that students face when accessing AI-based tools during their learning.

Two latest Horizon Reports of 2022 and 2023 respectively have identified AI as one of the key technologies for postsecondary education and have suggested potential applications of AI tools in learning and teaching in higher education. However, it is sad to note that AI-based tools have not yet been widely adopted in most higher education institutions. O'Dea & O'Dea (2023) argue that there is a lack of sound evidence available on the pedagogical impact of AI on learning and teaching. The duo argues that Artificial Intelligence technologies in their current state of development do not afford any real new advances for pedagogy in higher education. The scholars argue that there does not seem to be valid evidence as to how the use of AI technologies and applications has helped students improve learning, and/or helped tutors make effective pedagogical changes. They further argue that the pedagogical affordances of AI have not yet been clearly defined. It can be argued that the above literature does not favor the adoption of AI-based tools in the teaching and learning of students which counters the aim of the present study that advocates for the adoption of AI in higher education like other previous studies amidst challenges of the technology.

Shiohira (2021) points out that the era of artificial intelligence is young in years but advanced in impact. Intermediate-skill jobs are fast disappearing as their tasks are systematically automated, and individuals are likely to encounter AI technology in their everyday lives. The study shows that AI has broad implications for humanity, and on the education and training institutions that equip lifelong learners with the skills to navigate both work and society. The study also reveals that a wide range of institutions and other stakeholders have risen to the challenge through research and innovative

programs, thereby paving the way for a better understanding of AI's potential and its pitfalls.

Shiohira (2021) adds that current trends, programs, policies, and uses of AI related to technical and vocational education and training across continents as a resource for stakeholders invested in the future of intermediate-level workers and higher education systems that include colleges and universities. It can be argued that lecturers, students, administrators, policymakers, program implementers, and lifelong learners are expected to adopt the current trends, opportunities, and challenges raised by AI to build a future-ready education and training system in higher learning institutions. This finding correlates with the focus of the present study which advocates for the adoption of AI-based tools among full-time students at Kwame Nkrumah in learning and teaching Literature as a course in the Department of Literature and Languages.

Another study conducted by Alzahrani (2023) contributed to the existing literature on the implementation of artificial intelligence (AI) in education. The study also explored the factors that impact the behavior and attitude of students toward the use of AI in higher education. The study established that despite perceived risk negatively impacting students' attitudes, the factors of performance expectancy and facilitating conditions significantly influenced students' attitudes and their behavioral intention to use AI in education. The results also showed that effort expectancy does not significantly influence attitudes toward AI use in higher education.

Holmes et al., (2022) note that artificial intelligence (AI) is increasingly having an impact on education, bringing opportunities as well as numerous threats. The scholars observe that AI in education has already been the subject of numerous international reports. The study aimed to provide a holistic view to help ensure that AI empowers and not overpowers educators and learners and that future development and practices are

genuinely for the common good. This study is related to the present research which advocates for the adoption of AI-based tools in higher education.

In a related study, Leslie et al., (2021) argue that Artificial intelligence deals with human rights, democracy, and the rule of law: a primer, identifying and cross-checking the pertinent issues for education. The study examined the impact of AI and education on children's rights to education, human dignity, autonomy, to be heard, to not suffer from discrimination, privacy, and data protection, to transparency and explainability, to be protected from economic exploitation and to withhold or withdraw consent for their involvement with any technology. Concerning democracy, the study considered how AI and education might both support and undermine democratic values, how democratic education, which depends on open access and equity, may be compromised by the dominance of commercial AI and education applications, how certain tools promote individualism at the expense of the collaborative and social aspects of teaching and learning and the impact of AI models representing the world as a function of the past. Regarding the rule of law, scholars identified and examined several cases in which the use of AI algorithms in education has been subject to legal challenges such as the use of historical school-level data to grade individual learners, learning data traces, and biometric data.

The reviewed literature shows that there is a need to shed more light on the benefits of using AI-based tools for subsequent adoption in teaching and learning in higher education in courses such as Literature.

THEORETICAL LOCALE

The study adopted the technology acceptance (TAM) theory to guide the analysis of the present study. According to Davis (1985), TAM theory focuses on how end users perceive the utility and usability of new technology as it is adopted which is befitting in the present study that investigates the utilization of AI tools among full-time

students of Literature at Kwame Nkrumah University in Zambia. It is envisaged that TAM deals with the perceived usefulness (PU) and perceived ease of use (PEOU) of technology in education which is the pre-occupation of the present study.

In view of Davis (1993), users' attitudes (ATT) are key for determining the adoption and utilization of a particular technology such as AI. Ajzen (1985) supported the theory of TAM by proposing the concept of trust which is an extension of the theory of reasoned action (TRA). The scholar argues that several different attitudes theories, such as the learning, consistency, expectancy-value, and attribution, were interconnected to form the foundation of the TRA activity. Based on the TRA hypothesis, it is envisaged that when people have a positive attitude about a topic and their peers expect them to do so, motivations are much more likely to arise. This notion is in tandem with the expectations of the present study where the utilization of AI tools among full-time Literature students is expected to raise the aspirations of other students in various study areas.

Parasuraman (2000) supports TAM theory by incorporating the concept of technology readiness index (TRI). The scholar describes TRI as the predisposition of people to accept and employ new technology in the school system or education environments such as Kwame Nkrumah University in Zambia. Parasuraman (2000) argues that a person's inclination to adopt new technologies is mainly determined by their general mental state, which is the outcome of the balance between their enablers and inhibitors, that is, using technology made people uncomfortable because they felt out of control and outmatched. This shows that technology-related insecurity is characterized by worries about, mistrust, or skepticism toward its capabilities. The above notion cannot be distanced from the fears of some students of literature under study when it comes to the utilization of AI tools in education such as writing of assignments.

Parasuraman (2000) provides a consolation against insecurity of technology users by stating that a better ability to foresee the utilization of new information resources results from understanding and acceptance of technology tools such as AI. Literature further shows that improved personal control, flexibility, and knowledgeable information utilization can result from confidence in one's ability to use technology. TRI theory proposes that possessing more technological information such as AI can boost academic productivity. In addition, TRI acknowledges the information quality, accessibility, and enjoyment influence perceived usefulness and usability of technology in education. Furthermore, it is envisaged that perceived ease of use and perceived usefulness have improved students' interest in and intention to use technology in learning institutions such as Kwame Nkrumah University.

It can be concluded that TAM theory has been used in many previous studies, such as YouTube as a learning resource (Chintalapati & Daruri, 2017), quality assessment of the students (Tam, 2014), AI-based review (Cruz-Benito et al., 2019), special education teachers' (Siyam, 2019), and digital technology in education (Scherer, 2019).

The present study has combined the notions of TAM, TRA and TRI frameworks to underpin the qualitative thematic analysis of the findings to measure the respondent's attitudes. It is noteworthy that TRI principles have been specifically selected to better understand the student's insecurity and discomfort regarding the utilization of technology in education.

METHODOLOGY

The study employed a qualitative research approach based on the phenomenological research design. The study population included all full-time students of Literature in English. For sampling, purposive sampling was employed by selecting 50 students of Literature. This sample gave adequate information on the usage of Artificial

Intelligence (AI) among full-time students. Only 3rd and 4th Year students were targeted as they had stayed long enough at the university and were believed to have been exposed to Artificial Intelligence (AI) tools. The data collection was obtained from both primary and secondary sources. The data collection instruments used in the study was the interview guide and the questionnaire. The questionnaire was administered to 20 literature students selected randomly to supplement data generated from the interviews. Two Focus group discussions were also conducted among 12 students selected purposively while the rest were subjected to individual face-to-face interviews.

The data were analysed using the inductive model as given by Creswell (2009). The data were read through and a detailed analysis was conducted. The study employed a descriptive thematic analysis to make interpretations or meanings of the data.

FINDINGS

The study set out to explore the awareness and utilization of Artificial Intelligence (AI) among full-time Students of Literature at Kwame Nkrumah University in Zambia.

The study established that the majority of the participants were exposed to artificial intelligence (AI) tools. The majority of the participants also showed very good familiarity with the concept of AI. For instance, 75% of those subjected to questionnaires expressed familiarity with AI tools.

The study also revealed that most of the respondents indicated that the use of AI helped to enhance their understanding of lectures. One respondent (ST 1) said *'The use of AI helps students to understand the concepts better because sometimes we do not clearly get what the lecturers teach in class.'*

Further, the study indicated that some students had negative perceptions about AI. One respondent (ST3) said: *'AI is bad for literature students because it makes future*

writers lazy and stories not to be told in a simple way. It has no ethics and morality.'

Another one (ST1) added: *'AI should not be encouraged in higher learning Institutions for promotes lack of creativity. Students of literature need to be creative and great thinkers.'*

Regarding the potential benefits of AI in the study of Literature, the majority of the participants indicated that AI could bring improved analysis of literary works and enhanced understanding of literary works. One respondent (ST4) said: *'It has aided me in terms of learning applying and understanding authors.'*

The above statement in a way resonates with Obuobi's (2023) support for AI integration in education. He argues that AI-driven tools can provide support for students with disabilities, such as text-to-speech and speech-to-text technology, making education more accessible to a wider range of learners.

The finding above is, however, at variance with O'Dea & O'Dea (2023) who argue that there does not seem to be valid evidence as to how the use of AI technologies and applications has helped students improve learning.

As for challenges associated with AI, the study indicated that the majority of the respondents had specific challenges with AI which included the unreliability of AI tools, and encouraging laziness among students. One respondent (ST5) said: *'AI might cause laziness in academic studies in the sense that instead of us thinking on our own, we use AI. To make matters worse, AI cannot be trusted as it sometimes gives inaccurate information.'*

DISCUSSION

The study set out to explore the awareness and utilization of Artificial Intelligence (AI) among full-time Students of Literature at Kwame Nkrumah University in Zambia. The study revealed that the majority of the literature students were aware of AI tools and that

there was a high possibility of them using them although a few gave negative perceptions/attitudes toward AI. Most of the respondents were able to define AI. For instance, the following description was common among the students: *'AI is a tool or platform that is used to research the things that you want. This may be research on assignment, or data analysis in which we fail to use our natural minds such as chatGPT [sic]. This helps a lot.'*

The above finding demonstrates that AI is used among students and perhaps this explains why we as lecturers have, of late, noticed better literature essays being written by students. One would agree that the use of AI-related tools or platforms is common and as the findings reveal, the majority of the respondents indicated that they have used AI-related tools for their academic purposes. One respondent (ST 7) said *'ChatGPT tool is good but at some point, it does not give sufficient information.'*

This finding seems to be in tune with O'Dea & O'Dea (2023) who argue that AI technologies in their current state of development do not afford any real new advances for pedagogy in higher education.

Further, the finding that AI has enhanced the students' understanding of literature at Kwame Nkrumah University agrees with Jain & Jain (2019) and Obuobi (2023) whose results of their study showed that implementing AI in higher education institutes is likely to enhance the learning capacities of students to a large extent. The use of ChatGPT and Google Ask tools among students as one respondent (ST7) indicated, *"Google Ask apps and ChatGPT have helped me in my research and my vocabulary although these apps have their negative consequences"* confirms Holmes et al. (2022)'s submission that artificial intelligence (AI) is increasingly having an impact on education, bringing opportunities as well as numerous threats. In as much as AI has potential benefits as indicated by respondents, there are also potential drawbacks and challenges such as

encouraging laziness among students. One respondent (ST1) submitted: *AI has just come to promote laziness and erodes creativity among us students.*"This finding ties well with Obuobi's (2023) argument that there is a risk of standardization in the adoption of AI in education at the expense of creativity and critical thinking.

However, the need to promote AI-based Plagiarism & AI Content Detection such as Copyleaks should not be ignored at the institutions considering the threats that have come with AI tools. Obuobi (2023) cautions that over-reliance on AI can diminish the quality of human interaction in education, which is crucial for building strong teacher-student relationships and social skills. There is also a need to survey higher learning institutions to establish their preparedness for the adoption of AI among staff and students. There is also a need to shed more light on the benefits of using AI-based tools for subsequent adoption in teaching and learning in higher education through an empirical study in selected institutions in Kabwe.

CONCLUSION

The current study set out to establish the awareness and utilization of AI among full-time students of Literature at Kwame Nkrumah University. The objectives of the study were to establish the awareness levels of AI among full-time students of Literature at KNU, to examine the perceptions/attitudes of full-time students of Literature at KNU, to identify the challenges and benefits of using AI in a Literature-based educational setting and to determine the extent to which AI is being used by the full-time students of Literature at KNU.

The findings indicate that the majority of full-time literature students were aware of the existence of Artificial Intelligence tools and that they would use them in their studies. Despite some negative perceptions among students, the majority were already using AI to enhance their understanding and analysis of literary works. ChatGPT was found to be

more popular than other AI tools among students of Literature. The potential benefits of AI to students of Literature seem to outweigh the negative ones. However, the ability of AI to generate essays and other forms of written work poses a challenge for traditional assessment methods, which rely heavily on evaluating students' ability to produce original content. To address this challenge, educators will need to develop new assessment methods that focus on creativity, critical thinking, and problem-solving skills.

Most findings were consistent with reviewed studies conducted by some scholars in the field of Artificial Intelligence. Only a few studies were at variance with the current study's findings.

The study also revealed some challenges students face in the use of AI which included, the unreliability of AI, promotion of laziness in academic studies, that is, discouraging creativity among students, and poor ICT Infrastructure.

It is hoped that the findings will be cardinal in developing dedicated AI adoption strategies at the institutional level, updating the existing technology infrastructure, and up-skilling academic tutors for AI

The study's limitations, however, were that the sample size of 50 and only confined to students of literature could not be generalized to the entire institution. The study was also more qualitative than quantitative. Therefore, a research with large sample taking a mixed-method approach can be undertaken to generate a comprehensive picture of the utilization of AI among students at Kwame Nkrumah University in Zambia.

Further, there is a need to survey higher learning institutions to establish their preparedness for the adoption of AI among staff and students. There is also a need to shed more light on the benefits of using AI-based tools for subsequent adoption in teaching and learning in higher education

especially at Kwame Nkrumah University in Zambia.

Finally, ChatGPT was found to be more popular than other tools among students of Literature. The study showed that the potential benefits of AI to students of Literature seem to outweigh the negative ones. However, the need to promote AI-based Plagiarism & AI Content Detection such as Copyleaks should not be ignored. All in all, AI has the potential to complement traditional higher education but careful planning and ethical considerations are crucial if AI has to be meaningful to the development of higher education.

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