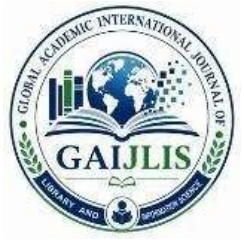
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THE IMPACT OF ARTIFICIAL INTELLIGENCE WRTITING TOOLS ON STUDENTS OF LIBRARY AND INFORMATION SCIENCE IN NIGERIA

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Abstract
Academic writing is one of the many areas of education being affected by artificial intelligence (AI), a significant technological advancement. The purpose of this study is to analyze how AI wring tools affects Nigerian Library and Information Science (LIS) students' writing abilities and also how AI-powered writing tools, such as ChatGPT, Grammarly, QuillBot, Google Gemini, and Jenni.ai, help LIS students improve their grammar, spelling, vocabulary, diction, and general academic writing. The functions of AI writings tools, negative and positive influence of AI wring tools on students of library and information science will also be analyzed. The study takes an opinion-based stance that is backed by scholarly viewpoints on AI in education and the body of existing research.

Keywords: Artificial Intelligence, Library and Information Science Student, Academic Writing, AI Writing Tools, ChatGPT, Google Gemini, QuillBot, Grammarly, Jenni.ai

INTRODUCTION

Background to Artificial Intelligence (AI)

Artificial intelligence is the ability of a machine or computer system to simulate and perform tasks that would normally require human intelligence, such as logical reasoning, learning, and problem solving (Bartneck et al., 2021). John McCarthy first used the phrase "Artificial Intelligence" in 1956 at the Dartmouth Conference, which signaled the start of AI as a field of study. According to McCarthy (2007), artificial intelligence (AI) is the science and engineering of creating intelligent computers that can carry out activities related to human intellect. Since then, developments in robotics, data analytics, machine learning, and

natural language processing have greatly advanced AI. AI systems are typically divided into two categories: general AI and narrow AI. While general AI refers to machines with human-like intelligence that can carry out a variety of cognitive tasks, narrow AI refers to systems built to carry out certain tasks, such as voice assistants, recommendation systems, and grammar correction tools (Russell and Norvig 2021). The narrow AI category includes the majority of AI solutions now utilized in education.

AI technology has been incorporated into educational settings more and more in recent years. ChatGPT, Grammarly, QuillBot, Google Gemini and Jenni.ai are examples of AI-powered applications that help students with idea generation, grammar correction, paraphrasing, and academic writing improvement. Luckin et al. (2016) claim that AI in education improves individualized instruction, makes learning materials more accessible, and helps students grow academically through intelligent feedback systems. The increasing use of AI in higher education has had a big impact on how students write. AI writing aids enhance the caliber and effectiveness of academic writing by offering prompt feedback on grammar, spelling, sentence structure, and vocabulary. Huang and Liu (2021) found that AI tools help students improve their writing through providing immediate feedback on grammar, structure, and coherence. Similarly, Roman-Acosta (2024) demonstrated that AI writing tools can boost students' academic writing by offering suggestions that improve sentence clarity and logical flow. Nwokorie and Onichakwe (2024) investigated how artificial intelligence affects students' reading habits, access to academic resources, and exam performance at Imo State University, Nigeria. Using a descriptive research design, the study collected data from 200 students through a questionnaire and analyzed it using frequency counts and percentages. The findings showed that AI has greatly influenced students' reading culture and academic success.

Oseji et al., (2021) outlined the applications of AI in Library and Information Science to include subject indexing, collection development, technical services, reference services, and descriptive cataloging. It also functions as an academic writing assistance that may be used by library

and information science students. AI tools have emerged as useful tools for enhancing students' writing abilities and academic efficiency since efficient communication and documentation are crucial components of LIS education. As a result, among students studying library and information science, the impact of AI on writing abilities has grown in importance. Academics have also voiced worries about an excessive reliance on AI tools, a decline in critical thinking, and moral dilemmas like academic dishonesty and plagiarism.

Methodology

This study adopted a conceptual review approach to assess the impact of Artificial Intelligence writing tools on students of library and information science in Nigeria. Relevant literature was reviewed to explore the application of AI tools in academic writing, their influence on students' writing abilities, and the associated benefits and challenges. Literature sources included peer-reviewed journal articles, books, and relevant reports published in both local and international contexts. Information was obtained from electronic databases and academic search platforms, including Google Scholar, Scopus, and ResearchGate. The selected literature was critically examined, synthesized, and discussed thematically to provide insights into the opportunities, challenges, and implications of AI use for the writing skills of LIS students in Nigeria.

Emergence of AI Writing Tools in Education in Nigeria

AI writing tools are software programs that help users create, edit, proofread, and enhance written content. They are driven by machine learning and natural language processing technology. The extensive use of these tools in Nigerian and international educational institutions has been greatly aided by the quick development of digital technology and internet accessibility. More complex writing assistants that can comprehend context, produce content that is human-like, and offer tailored feedback have been developed over time as a result of developments in artificial intelligence and natural language processing. Integrating Artificial Intelligence (AI) in academic writing has revolutionized how students, researchers, and educators approach various writing tasks. AI-powered tools have emerged as valuable resources that offer real-time assistance,

feedback, and language enhancement options, elevating the quality and efficiency of academic writing (Raheem 2023).

AI is becoming an important tool in education, as it helps students in developing language skills such as writing, speaking, reading, and listening. In Nigeria, AI is being used to improve speaking skills through speech recognition and language therapy applications, which help students with pronunciation and fluency (Ibrahim & Suleiman, 2024). AI tools demonstrate good prospects in enhancing academic writing and peer review processes. These tools streamline writing by automating repetitive tasks, improving grammar and stylistic quality, and providing immediate feedback.

According to research by Zawacki-Richter et al. (2019), AI applications in higher education have grown dramatically because they facilitate self-directed learning, increase student engagement, and make learning resources more accessible. The capacity of AI technologies to enhance academic productivity and writing abilities also contributes to their increasing appeal among LIS students. AI writing aides help students create more lucid and polished academic papers by offering immediate grammar corrections, vocabulary recommendations, paraphrase alternatives, and organizational support. According to studies, students who use AI-assisted writing tools frequently report feeling more confident and writing more effectively (Kasneci et al., 2023).

Chen et al. (2022) conducted a study to evaluate the effectiveness of AI in enhancing grammar and style in English academic writing. The results indicated a significant improvement in writing quality, with students showing a better understanding of grammar rules and reduced errors in their writing. Similarly, Survey by Okoye & Lawal (2022) over 75% of Nigerian university students use AI tools primarily for grammar correction and sentence restructuring, though a significant portion of the academic community, particularly among library personnel and teaching staff still demonstrate limited awareness and preparedness to integrate AI tools into their work. This suggest that the introduction of Artificial Intelligence writing tools is changing the teaching and learning process in the field of academic writing

in Nigeria. According to Russell and Norvig (2021), AI technologies are now crucial instruments for handling massive amounts of data and assisting with wise decision-making. AI-assisted technologies may be used by many LIS students for academic writing assistance, virtual research activities, and distance learning. Holmes et al. (2019) claims AI technologies help adaptive learning by recognizing students' areas of weakness and offering tailored suggestions that improve learning results. Furthermore, (Zawacki-Richter et al., 2019), AI tools have emerged as useful tools for improving writing effectiveness, lowering language barriers, and boosting students' academic production.

Despite these advantages, academics have voiced worries about students' over-reliance on AI technologies. Over-reliance on AI-generated information, according to some academics, may impair students' capacity for independent writing, critical thinking, and originality. With the growing usage of AI in education, ethical issues including plagiarism, false information, and academic dishonesty have also grown to be significant problems (Dwivedi et al., 2023). Despite these concerns, AI in library and information science education illustrates how academic communication and information management are evolving in the digital era. AI tools are still having an impact on LIS students' learning, research, and professional skill development. Therefore, encouraging responsible and efficient technology use in educational settings requires an awareness of how AI affects LIS students.

Artificial Intelligence Writing Tools

Artificial intelligence (AI) writing tools are software programs that help users create, edit, and improve written content by utilizing machine learning, natural language processing, and sophisticated algorithms. In addition to offering intelligent writing assistance including grammatical correction, sentence restructuring, paraphrase, summarizing,vocabulary improvement, and content creation, these tools are made to mimic human language comprehension.

AI-powered tools have emerged as valuable resources that offer real-time assistance, feedback, and language enhancement options, elevating the quality and efficiency of academic writing. Examples of AI

writing tools include ChatGPT, Grammarly, QuillBot, Google Gemini and Jenni.ai.

1. **ChatGPT:** OpenAI, a San Francisco-based company that produced the first GPT series of big language models, introduced ChatGPT on November 30, 2022. Advanced language models and natural language processing capability ChatGPT, a state-of-the-art conversational artificial intelligence assistant. It stands out from competitors with its ability to understand and communicate in natural language with human -like fluency, engaging in contextual dialogue on virtually any topic (Rawat, 2024). ChatGPT, a conversational AI system created by OpenAI that produces human-like responses in response to user requests, is one of the most popular AI writing tools. It can help students come up with ideas, write essays, summarize facts, respond to inquiries, and construct better sentences.

2. **Grammarly:** Grammarly suggests improvements to sentence structure and flow, ensuring that writing is not only error-free but also engaging for the reader. Grammarly is not just a mere grammar checker; it is a comprehensive writing assistance tool that aids writers in refining their writing style, ensuring clarity and coherence in their expressions. Its potential to enhance writing productivity and elevate the quality of written content makes it an indispensable asset for writers in diverse fields (Raheem et. al. 2023).

3. **QuillBot:** QuillBot was founded with the intention of simplifying writing. It was founded in 2017 by David Silin, Rohan Gupta, and Anil Jason while they were students at the University of Illinois. The application was first created to assist with word rewording through paraphrase, but it has since evolved into a flexible writing tool. It offers various paraphrasing modes to achieve the desired level of originality, ensuring that writing adheres to academic integrity standards. Its features include; Paraphrasing,Grammar checker, Plagiarism detector and Citation creator (Raheem et. al. 2023). NurmayantiSuryadi (2023) conducted an experimental study and reported that QuillBot students completed their writing tasks faster and expressed greater satisfaction with the tool's automated feedback.

Similarly, Kurniati and Fithriani (2022) conducted a qualitative study, revealing that QuillBot's user-friendly interface and personalized feedback enhanced writing efficiency and confidence in student writers.

4. **Google Gemini:** Google Gemini, powered by GenAI, is a compelling AI model that excels at generating new con-tent based on the input it receives. With its impressive capabilities, Gemini can create a wide range of data types, including text, code, images, and more. Therefore, there is no doubt that Gemini is the ultimate tool for research, idea generation, writing and problem-solving. Its features assist users in creating content, getting research guidance and summarising papers. Unlike previous models trained on unchanging datasets, Gemini has the possibility to tap into Google Search to acquire and process real-world information (Portakal, 2023).
5. **Jenni.ai:** Jenni is a writing platform built for academic and professional work. It combines a document editor with AI tools for drafting, editing, citing, and reviewing, all in one place. Jenni.ai is a good research paper writing companion, it assists with brainstorming ideas, structuring your work, and even generating complete drafts. It can also suggest relevant citations and promote efficient and ethically sound research writing.

Functions of AI Tools in Writing

Artificial Intelligence (AI) writing tools perform several key functions that support students and researchers in producing clear, accurate, and well-structured academic work. These functions include grammar correction, sentence restructuring, idea generation, summarization, and citation assistance. Collectively, they enhance writing quality, improve efficiency, and support academic learning processes (Kasneci et al., 2023). Various functions of AI in writing include;

1. **Grammar Correction:** Grammar correction is one of the main features of AI writing tools. Artificial intelligence (AI) systems automatically identify and correct spelling, punctuation, verb tenses, and sentence structures in real time. Students can utilize programs like Grammarly to enhance the clarity and accuracy of their academic writing. These tools help students identify errors and

suggest improvements, making writing clearer and more concise.

2. **Sentence Restructuring:** By enhancing language flow, coherence, and readability, AI writing tools also help with sentence rearrangement. Quillbot and ChatGPT are two examples of applications that assist users in rewriting sentences to improve clarity and academic tone without sacrificing meaning.
3. **Idea Generation:** AI writing tools serves as an invaluable writing assistant by offering prompt responses and assisting in brainstorming sessions. Researchers and students can interact with the model, present their ideas, and receive contextually relevant suggestions to expand upon their topics (Bhatia, 2023). This real-time collaboration aids in overcoming writer's block and fosters creativity during the initial stages of writing.
4. **Summarization:** AI writing tools can also summarize, which is the process of distilling lengthy writings into more manageable chunks while keeping important concepts. Students that handle a lot of academic texts will find this option very helpful. LIS students can effectively summarize reports, research papers, and journal articles with the aid of programs like Quillbot and ChatGPT. AI-driven summarization enhances knowledge access and boosts academic output in higher education, claim Zawacki-Richter et al. (2019).
5. **Citation and Referencing Assistance:** AI tools can aid in citation and referencing by providing guidance on proper citation formats and generating reference entries for various citation styles (Jarrah et al., 2023).

Benefits of AI Writing Tools on LIS Students in Nigeria

Benefits of Artificial Intelligence writing tools on students are as follows:

1. **Improvement in Grammar and Spelling:** AI writing tools significantly increase the accuracy of grammar and spelling by detecting and fixing mistakes instantly. Students can generate more polished academic work by using tools like Grammarly, which automatically identify spelling, grammar, and punctuation

flaws. Grammarly diligently scans the text as users type, highlighting potential grammatical and spelling errors (Chen, 2021).

2. **Enhanced Efficiency:** AI tools can significantly boost writing speed and workflow. Features like grammar and plagiarism checkers, citation generators, and paraphrasing tools help polish writing quickly and efficiently.
3. **Enhancement of Vocabulary and Diction:** By suggesting substitute words, enhancing sentence tone, and providing context-based language enhancements, AI systems improve vocabulary and diction. Students can reword phrases using richer vocabulary and more suitable academic language with the aid of AI tools. It detects wordy or redundant phrases, provides alternatives for word choices, and suggests improvements to sentence structure and clarity (Benchaira, 2020).
4. **Faster Writing and Editing Process:** By automating processes like formatting, paraphrasing, and proofreading, AI writing tools greatly accelerate the writing and editing process. As a result, LIS students can finish homework faster and concentrate more on developing content rather than making technical mistakes.
5. **Improved Clarity and Concision:** AI can analyze your writing style and suggest ways to enhance clarity and conciseness. This can be particularly helpful in expressing complex ideas in a clear and concise manner.
6. **Increased Confidence in Writing:** Students are more motivated to write and perform better academically when they receive real-time corrections. According to Holmes et al. (2019), AI-supported learning environments help students develop self-efficacy by providing them with ongoing support and tailored feedback.

Negative Impacts of AI Writing Tools on LIS Students

According to Studies by Abd Rahman et. al. (2023); Kamalov et al. (2023) , highlighted influence of artificial intelligence to Include;

- Data security and privacy
- Plagiarism and academic integrity
- Bias and discrimination
- Resource intensive
- Faculty development and support
- Technical issue
- Assessment and accountability
- Lack of human interaction and equity concern etc.

The Role of Lecturers and Institutions in Use of AI Writing Tools

How Library and Information Science (LIS) students use Artificial Intelligence (AI) writing tools is greatly influenced by lecturers and academic institutions.

1. Lecturers and educational institutions are in charge of instructing students on how to use AI technologies like QuillBot, Grammarly, ChatGPT, Google Gemini and Jenni.ai in an ethical manner. This entails teaching students about proper citation techniques, academic integrity, and avoiding plagiarism while utilizing work created by AI.

2. Institutions should incorporate AI literacy within the Library and Information Science curriculum to help students comprehend how AI systems work, their limitations, and how to utilize them appropriately in academic writing.

3. Instead of encouraging students to utilize AI tools in place of independent writing, lecturers can urge them to use them as helpful learning tools. A balanced strategy guarantees that students gain from AI support while simultaneously honing their own analytical, reasoning, and writing abilities.

4. Many African institutions lack formal policies governing AI-assisted writing, in contrast to Western and Asian nations where universities have set specific restrictions on Institutions should formulate policies guiding the use of artificial intelligence. n the use of AI in academic settings (Okunlola, 2024).

5. There is lack of institutional policies regulating AI-assisted writing in Nigerian universities. While some universities globally have already established clear rules regarding AI use in academic work, many Nigerian institutions are yet to do so (Ibrahim et al., 2024).

Conclusion

The study conducted a conceptual review on AI writing tools on students

of library and information science, it has been found that writing abilities of students studying library and information science have been significantly impacted by artificial intelligence. AI tools make academic writing easier and more accessible by enhancing grammar, diction, writing efficiency, and research support. A fair assessment showed that AI is neither totally advantageous nor detrimental. Rather, how it is used determines its influence. When applied appropriately, AI may improve learning through instantaneous feedback, idea development help, and higher-quality writing. However, excessive use of it may impair students' ability to think critically, be creative, and write independently. Therefore, rather than taking the place of human effort, AI should be viewed as an additional academic assistance tool.

Further Study

This research still has limitations, so further research needs to be conducted on the the topic “The impact of artificial intelligence writing tools on students of library and information science in Nigeria” in order to perfect this research and increase insight for readers.

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