

## **Auspiciousness or Dysfunctionality? An Analysis of the Prospects and Challenges of Artificial Intelligence Tools (AI) in Communication Education Research in Nigeria**

**By**

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### **Abstract**

*The incorporation of Artificial Intelligence (AI) in communication and media research and its implication of these developments on Communication Education has precipitated a paradigm shift that continually engender opportunities and challenges for researchers, educators, professionals and students in the discipline in Nigeria. Existing literature has highlighted the limitations of research on AI adoption in Communication Education particularly in tertiary institutions. The main issues identified include limited infrastructure and accessibility, non-functional curricula on AI in research, ethical considerations, and inadequate capacity building in AI adoption in Communication Education research in Nigeria. This paper examines the influence of AI on Communication and Media Education research in key areas: topic development, problem articulation, literature review, data generation, and data analysis. AI-powered tools such as (Mendeley, EndNote, SciSummary, ResearchRabbit and SurveyMonkey) are recalibrating research methodologies, pedagogies, and practices, facilitating more functional and precise analysis, at the same time raising concerns associated with originality of ideas, ethical bias, and personal interpretability competence. Qualitative content analysis was used to analyze literature on AI in Communication Education research. Data was collected from online academic journals using keyword such as “AI in communication research, AI in Communication Education and AI powered Communication Research. Data were analyzed using Thematic Analysis adopting an Inferential Analysis Approach”. Purposive sampling was used to select relevant literature on AI in communication research education. The findings indicate that AI is transforming communication and media research education by expanding the traditional research education skills and approaches in topic sourcing and articulation, literature review and documentation as well as data collection and analysis. This enables more efficient and accurate analysis leading to more valid significant and findings. The paper concludes that ethical and responsible adoption of AI in Communication Education research is imperative for efficient utilization of AI tools in research as well as for the transformations and cultivation of new skills to prepare both researchers and students for a rapidly evolving communication landscape. Ultimately, this paper recommends that communication researchers and educators should harness AI's potential while addressing its limitations to advance the field forward.*

## **Introduction**

Artificial Intelligence (AI) is a computer system that integrates human-like processes: learning, adaptation, synthesis, self-correction, and use of data for complex processing tasks. The rapid integration of Artificial Intelligence (AI) in communication research and education has transformed the ways we understand and practice communication as a profession and Communication Education research as a process of scientific inquiry in media and communication studies (Guzman, 2018; Fuchs, 2017). AI-powered tools are reshaping research methodologies, pedagogies, and practices, enabling more efficient and accurate analysis, while also raising concerns about originality, bias, and interpretability (Fuchs, 2017; Gandomi & Haider, 2015).

Communication Education research is an academic field that focuses on the systematic and organized inquiry into the communication processes, methods and theories. It essentially examines how people create, share and interpret communication experiences and how these processes influence individuals and groups.

Consequently, Kaplan & Haenlein, 2019 observed that the impact of AI on communication research and education is multifaceted; therefore, it is essential to explore its effects on the field. Communication research and education have traditionally relied on human researchers to physically and manually generate, process, analyze, and interpret primary data.

However, with the advancement and democratization in ICT and the subsequent emergence of AI, Chen et al., 2018; Kobayashi et al., 2018 have argued that researchers can now leverage Machine Learning Algorithms (MLA) and Natural Language Processing (NLP) techniques to analyze large datasets and identify patterns. AI-powered tools can help researchers generate topic ideas, identify research gaps, and suggest potential topics based on keyword analysis and semantic search.

In communication Education research, AI is being used to develop personalized learning plans, improve students' outcomes, and enhance their learning experiences (Raj & Kumar, 2018). Despite the benefits of AI in communication research and education, Fuchs, 2017; Gandomi & Haider, 2015 noted that there are concerns about its impact on originality of research ideas, ethical bias, and non-

contextual interpretability. Thus, AI-powered analysis can lead to homogenization of research methods and findings which raises concerns about authorship and ownership (Guzman, 2018; Kaplan & Haenlein, 2019). Hence it is essential to address these concerns and develop strategies to harness AI's potential while ensuring transparency and accountability in AI-driven research outcomes.

In Nigeria, existing literature in the area of AI and Communication Research Education has highlighted the limitation of researches on AI adoption in Communication Education Research particularly in tertiary institutions. As evident from the literature, few studies conducted with a focus on the adoption and integration of AI in communication and media research education in Nigeria. Moreover, there is a limited availability and accessibility to AI infrastructure among students, educators, researchers and scholars in the area. The literature also exposes the non-integration of a functional curriculum on AI in communication research education. Similarly, it highlights concerns about ethical considerations on ethical guidelines on AI and communication research as well as poor capacity building in AI adoption in communication research education in Nigeria which would equip educators, researchers and students with the needed skills to facilitate effective integration and adoption of AI (Ya'u, H. A. and Ismail, H. 2025).

This paper explores the imperatives of AI tools on Communication Education Research, highlighting opportunities, challenges, and future directions. It discusses the implications of AI on communication research, including topic sourcing and development, problem articulation and objectification, literature review and documentation, data collection and synthesis as well as data analysis and inferences. The paper also examines the implications of AI on communication education, including the development of personalized learning plans and the enhancement of student outcomes.

### **Artificial Intelligence in Academic engagements**

Academic writings including research require unique methods and techniques to make the product original, interesting, significant and valid in the arrangement process. Educators and students must do research, observe, analyze and use many

references. Academic writings should be taught to solve problems using presented data and facts. Hence, the objective should be adequately achieved (Fang, 2021).

Miller & Wu, 2021; UNESCO IITE, 2020 observed that integrating AI into research and education activities is a critical paradigm that substantially affects teaching and learning processes. The integration engenders new patterns; AI helps create a learning environment that is consistent with cognitive existential development, intensifying involvement, and showcasing flexibility in learning. In research and education, AI is deployed through the use of different apps, such as AI Kaku, ChatGPT, Eskritor, Grammarly, Plot Generator, Poem Generator, Speech-to-Text, Text-to-Speech, Smodin, Mendeley, EndNote, SciSummary, ResearchRabbit and SurveyMonkey and other apps (Fitria, 2021; Gayed et al., 2022).

Garrel and Mayer (2023) conducted a study on the use of AI-based tools in research among students in Germany. The results from the study showed that almost two-thirds of the students surveyed use or have used AI-based tools as part of their research and studies engagements. In this context, almost half of the students explicitly mentioned ChatGPT or GPT-4 as a tool they use. The authors further explained that Students of engineering sciences, mathematics and natural sciences use AI-based tools most frequently. A differentiated examination of usage behaviour makes it clear that students use AI-based tools in a variety of ways. Clarifying questions for understanding and explaining subject-specific concepts are the most relevant reasons for use.

Moreover, Gayed, J. M, Carlon, M. K. J., Oriola, A. M., & Cross, J. S. (2022) demonstrated the positive impact of AI writing tools on students' writing proficiency and self-efficacy. Such tools have proven to be valuable aids for educators, researchers and learners, especially in providing timely feedback and improving writing skills especially during literature search and review. However, Makarius et al. (2020) highlighted the need for further improvements in AI tools to enhance their contextual understanding and effectiveness across diverse subject areas.

Similarly, Su, R. S., Andayani, W., Sari, W. S., & Lubis, F. K. (2022) explored the impact of AI on the teaching process and concluded that while AI tools can be valuable in providing feedback, the guidance of teachers remains essential in fostering critical thinking and creativity. On the ethical front, Chaudhry et al. (2023) examined the implications of AI in plagiarism detection, stressing the need for clear guidelines and educating students about AI's limitations and proper use. Looking ahead, the researchers further identified several challenges and potential areas for future research. The interpretability of AI-generated writing remains an ongoing concern, with Theodosiou and Read (2023) proposing methods to enhance transparency and comprehension.

Furthermore, Miranty and Widiati (2021) & Almusharraf and Alotaibi (2023) investigated the impact of Grammarly, an AI-based grammar and style checker, on undergraduate students' writing skills. The study found that students who used Grammarly demonstrated improvements in grammar accuracy and writing quality compared to the control group. AI language models, like ChatGPT, have been investigated for their potential in assisting students with content generation.

In a study by Farrokhnia et al. (2023) & Rospigliosi (2023), it was found that ChatGPT was utilized to aid graduate students in generating research proposals. The results indicated that the AI-generated content was valuable in providing initial ideas and structuring the proposals, though students still needed to refine and expand on the generated content. Ethical considerations surrounding the use of AI writing tools in higher education have been explored.

Moreover, Lamas & Arnab, (2022) investigated the use of Zotero, an AI-powered reference management tool, among postgraduate researchers. The study found that Zotero significantly improved the organization and citation process, streamlining students' research workflow. Specifically, Malik et al, (2023) conducted a study on students' perceptions of AI usage in academic essay writing using a case study design. The findings indicated a positive reception of AI-powered writing tools, with students acknowledging their benefits in grammar checks, plagiarism detection, language translation, and essay outlines. The authors also found out that artificial intelligence enhances students' writing abilities, self-efficacy, and understanding of academic integrity. However, some students

expressed concerns about potential impacts on creativity, critical thinking, and ethical writing practices.

QuillBot, another AI tool, specializes in paraphrasing, helping students avoid plagiarism while maintaining the original meaning of their content. Kurniati and Fithriani (2021) found that QuillBot aided students in developing better paraphrasing skills, which is a critical competence in academic writing. WordTune, on the other hand, focuses on refining and improving the tone and style of the text. A study by Lam and Moorhouse (2022) found that WordTune effectively helped students identify their writing weaknesses, thereby promoting self-assessment and learning. This tool goes beyond simple grammar correction and delves into the stylistic elements of writing.

Furthermore, as illustrated in Bhutoria's (2022) work, AI-driven platforms and applications offer personalized learning opportunities for students, identifying their writing strengths and weaknesses. This empowers educators to tailor their teaching strategies to each student's unique needs and preferences, leading to more effective learning outcomes (Dogan et al., 2023).

Cahyono et al. (2023) explored a workable approach mediated by mobile technology in teaching writing, which uncovers another layer of tech-enabled pedagogical innovation. Students are emboldened to publish their work in public forums, nurturing their confidence and writing abilities. Such platforms also promote peer review and feedback mechanisms, fostering a sense of community and collaborative learning.

However, as the literature acknowledges, the digitization of writing instruction is not without its challenges. Duncan and Joyner (2022), opine that educators must grapple with issues related to digital equity, privacy, and the potential for distraction. These issues underscore the necessity for an ongoing dialogue and proactive approaches in crafting pedagogical policies and strategies as we continue to navigate the teaching of writing in this artificial intelligence era.

Marzuki et al., (2023), conducted a study to examine the range of available Artificial Intelligence (AI) writing tools and assess their influence on student writing, the study gathered data from four teachers across three distinct universities in Indonesia, shedding light on the variety of AI writing tools used in their

classrooms. These included applications like Quillbot, WordTune, Jenni, ChatGPT, Paperpal, Copy.ai, and Essay Writer.

However, Iskender (2023) provided a critical perspective on this matter, arguing that the use of AI writing tools could lead to diminished critical thinking skills if students become overly dependent on them. The author expressed concern that students might prioritize quick fixes from AI tools over deep understanding and learning from their mistakes, which would essentially negate the process of learning, growth, and development in writing.

### **Potentials of Artificial Intelligence in Communication Research**

Kaplan & Haenlein, (2019) argued that AI is impacting and affecting communication research education in various ways, including topic sourcing and development, problem identification and articulation, literature review and documentation, data collection and synthesis, as well as data analysis and interpretation.

**Research Topic sourcing and Development:** AI-powered tools can help researchers generate topic ideas, identify research gaps, and suggest potential topics based on keyword analysis and semantic search (Chen et al., 2018; Kobayashi et al., 2018). For instance, AI-powered topic modeling can help researchers identify emerging trends and topics in communication and media research thereby simplifying the complex and rigid process of sourcing research ideas and topics from libraries, journals, conference proceedings and other offline and none digital platforms. Notable of these tools for this purpose include *Sourcely*, *ResearchRabbit* and *perplexity*.

**Research problem identification and articulation:** AI-driven tools can help researchers and educators review literature, identify and articulate research gaps. This is achieved by analyzing large datasets, identifying patterns, and detecting anomalies. Thus, AI-powered data analysis can help researchers identify complex patterns and relationships in communication or media data. Typical examples of AI tools used for these engagements include *Textify Analytics Research Gaps Suggester*, *AnswerThis*, *RefHunters*, *ConnectedPapers* and *Scholarly Gap Finder*.

**Literature Review and documentation:** in communication research this connotes an organized effort to synthesize and document the extent of existing knowledge in an area of interest. It culminates by identifying patterns and establishing the literature gaps and directions. AI-powered literature search can assist in searching and retrieving relevant literature, reducing the time and effort required for literature review. Moreover, AI-powered citation analysis can help researchers identify influential authors and detect emerging trends in communication research (Chen & Song, 2017). Some of the AI tools used for this purpose are *Insight7, Coral AI, VOSviewer, Litmaps and AVEKSA*

**Data Collection and synthesis:** AI-powered data scraping can assist researchers and scholars in collecting both qualitative and quantitative data from various sources, including social media, online libraries and archives, and databases (Gandomi & Haider, 2015; Kaplan & Haenlein, 2019). For instance, AI-powered data collection can help researchers collect large datasets and reduce collection time. Some of the notable AI tools for this engagement are; *Monkey Survey and Qualtrics*.

**Data Analysis and interpretation:** Machine learning algorithms can assist in analyzing large quantitative or qualitative datasets, identifying patterns, contextualizing the data to the context and providing the implications as well as predicting outcomes (Chen et al., 2018; Kobayashi et al., 2018). Also, AI-powered data analysis tools can help researchers, students and scholars to identify complex patterns and relationships in communication data (Park & Lee, 2019). Some of the popular AI tools used for data presentation, analysis and interpretation in communication and media studies are *SPSS, Insight7, Nvivo, Microsoft Power BI, Julius AI, and Tableau AI*.

## **Artificial Intelligence and Originality of Communication and Media Research**

Originality is a fundamental attribute apparent or inherent in all serious, significant and interesting theses and dissertations. It essentially provides design and outline, magnitude and directions through which authors, candidates and researchers can identify, formulate and articulate their individual contribution to knowledge in a specific area of interest. However, irrespective of institutional, disciplinary and

ideological orientations, variation exists regarding what can constitute or establish originality in thesis, dissertations and all non- certificate researches and how the contribution to knowledge can be clearly demonstrated and recognized.

In communication and media studies, the substance of theses and dissertations is fundamentally determined and acknowledged to be an independent and autonomous document that makes an original contribution to knowledge by providing solutions to an existing or potential communication problems or improving the understanding or application of specific communication theory or model. Original work is therefore significant substantially, because it results in the production of new knowledge which addresses the topic area or discipline.

Conceptualizing and operationalizing originality poses significant challenge and dilemma to most candidates and empirical researchers; consequently, it becomes a crucial source of uncertainty and anxiety or depression.

### **Constituents of Originality in Communication and Media Research**

Originality is frequently associated with an idea, concept or event that is truly novel or unique. In relation to doctoral engagements, many studies have explored what doctoral examiners from various academic disciplines look for in a PhD and how they recognize originality. Gill and Dolan (2015) observed that these studies have highlighted some commonalities in most disciplines regarding what constitutes originality. For example, a PhD can be original in a number of areas, including the approach, topic area, hypotheses, method, data, findings or theories (Phillips 1994, Winter et al 2000, Mullins and Kiley 2002, Delamont et al 2004, Crier 2006, Phillips and Pugh 2010, Wisker 2012).

Variations in the definition of originality exist and persist but Phillips and Pugh (2010 cited in Gill and Dolan 2015) designed and outlined 15 fundamental areas that they believe can constitute originality in communication and media research.

They include:

1. Setting down a major piece of new information in writing for the first time.
2. Continuing a previously original piece of work.
3. Providing single original technique, observation or result in otherwise unoriginal but competent piece of research.
4. Carrying out original work design by supervisor
5. Having many original ideas, methods and interpretations all performed by others under direction of postgraduate.

6. Showing originality in testing somebody else's idea/theory.
7. Carrying out empirical work that has not been done before.
8. Making a synthesis of things that have not been put together before.
9. Using already known material but with new interpretation.
10. Trying out something in this country that has previously been done only elsewhere.
11. Taking a particular technique and applying it in a new area.
12. Bringing new evidence to bear on an old issue.
13. Being cross-disciplinary and using different methodologies.
14. Looking at areas not previously explored in a particular discipline.
15. Addition to knowledge in a way that has not been done before.

These elements of originality can be contextualized or domesticated to all forms and types of communication and media research assess and determine the originality of the research idea, approach, method, theory or findings.

AI's impact on the originality of communication research is multifaceted. AI can bring new perspectives to research by identifying patterns and relationships that human researchers might miss (Fuchs, 2017; Guzman, 2018). Also, AI-powered analysis can also lead to homogenization of research methods and findings, thereby reducing the diversity of research approaches and perspectives (Guzman, 2018; Kaplan & Haenlein, 2019). However, AI-powered analysis can help researchers identify new research questions and hypotheses by analyzing large datasets and identifying patterns (Chen et al., 2018; Kobayashi et al., 2018).

Similarly, in the area of authorship and ownership, AI-powered research raises concern about authorship and ownership, highlighting the need for clear guidelines and standards for AI-driven research (Fuchs, 2017; Guzman, 2018). Bias and Interpretability are another area of interest because AI-powered analysis can perpetuate biases and stereotypes, highlighting the need for critical evaluation and transparency in AI-driven research outcomes.

## **Implications for Communication Education**

The integration of AI in communication education requires adapting to AI-driven transformations and developing new skills to prepare students for a rapidly evolving media landscape (Kaplan & Haenlein, 2019; Marshall & Shipman, 2015). Communication educators must harness AI's potential while addressing its limitations to advance the field (Guzman, 2018; Fuchs, 2017).

The following are some of the implications of the integration of AI in communication research education in Nigeria.

- 1) **Personalized Learning:** AI-powered tools can help educators, students and researchers to develop personalized learning plans, improving students' outcomes and enhancing their learning experiences in all areas of research engagements.
- 2) **New Skills:** Communication educators should develop new skills to work effectively with AI tools, including problem articulation, data sourcing, data analysis, data interpretation, and critical evaluation.
- 3) **Curriculum Development:** Communication and media programs curricula should be revised to incorporate AI-driven topics, including AI-powered communication research, data analysis, and interpretation as well as ethical and responsible use of AI in communication research.
- 4) **Ethics and Accountability:** Communication educators must address AI-related ethics and accountability issues, including bias, interpretability, and authorship (Fuchs, 2017; Guzman, 2018).

## **Methodology**

This paper adopts a qualitative approach to explore the imperative of AI in communication research and education. The methodology involves a comprehensive review of existing literature on AI in communication research and education.

Qualitative content analysis was used to analyze the literature on AI in communication research and education in Nigeria. Data were collected from various sources, including academic journals, conference papers, and books, using keywords; AI in communication research, AI in communication education, and AI-powered communication research.

A purposive sampling approach was used to select relevant literature on AI in communication research and education. The population for this consists of all online published journal and book articles on AI in communication research and education.

The data were analyzed using thematic analysis, identifying themes and patterns related to AI in communication research and education.

## **Results**

The results of this study indicate that AI is transforming communication research education in Nigeria, bringing both opportunities and challenges. AI-powered tools are reshaping research methodologies, pedagogies, and practices, enabling more efficient and accurate analysis, but also raising concerns about originality, bias, and interpretability.

However, the state of AI adoption in communication and media research education in Nigeria is still in its early stages this is because there are not many online-published empirical, conceptual or theoretical studies on the adoption of AI in communication and media research education in the country. Nevertheless, as revealed in the literature AI tools are being introduced into the Nigerian educational system to enhance learning outcomes, improve effectiveness in teaching and learning as well as advance access to quality education at all levels.

The Nigerian Artificial Intelligence Strategy also recognizes the need for local talent development through effective and diligent identification and engagement with Nigerian researchers, scholars, educators and experts in AI available at universities and other institutions of higher learning. This policy aims to position Nigeria as a potential hub for AI in West Africa and a model for Africa's socio-economic and political development while ensuring ethical and responsible AI development and deployment.

From the preceding, it can be deduced that AI tools have enormous prospects, potentials and challenges which should be harnessed by researchers and educators with a focus on communication and media research education in Nigeria.

AI-powered tools can help researchers analyze large datasets; research topic sourcing, identify and articulate problems, conduct literature review and documentation, generate and analyze data, provide critical and contextual interpretation, identify patterns, and predict outcomes; this enables more efficient and accurate analysis. Researchers must develop new skills to work effectively with AI tools and interpret results. AI tools can also help educators develop comprehensive curricular and module for personalized learning plans and improve student outcomes but also require educators to adapt to AI-driven transformations and develop new skills.

AI-powered analysis can lead to homogenization of research methods and findings, raising concerns about originality and authorship. AI can also perpetuate biases and stereotypes, highlighting the need for critical evaluation and transparency.

The integration of AI in communication research and education requires adapting to AI-driven transformations and developing new skills to prepare students for a rapidly evolving media landscape (Kaplan & Haenlein, 2019; Marshall & Shipman, 2015). Communication educators must harness AI's potential while addressing its limitations to advance the field (Guzman, 2018; Fuchs, 2017).

### **Conclusion**

Artificial Intelligence tools are transforming communication research education, bringing both opportunities and challenges. By understanding AI's impact on communication research education, stakeholders can harness its potential to advance the field and prepare educators, researchers, scholars and students for a dynamic and functional communication and media research education in Nigeria. Transparency and accountability are essential in AI-driven research outcomes. This is achieved through adherence to ethical guidelines and principles governing social science and communication researches, peer review assessment mechanisms and easy access to materials used and publications online.

AI tools offer unprecedented opportunities for enhancing research efficiency, expanding access to communication education, personalized learning experiences but they pose obstacles related to infrastructure, digital literacy, originality of ideas and ethical considerations. In Nigeria, Communication Education research institutions should invest in AI infrastructure development, AI training and

capacity building programmes, interdisciplinary collaboration and AI sensitive curricula development.

### **Recommendations**

1. Communication researchers and educators in Nigeria should develop new skills to work effectively with AI tools to detect potential research ideas, review and document literature, collect, analyze and interpret results.
2. AI-powered tools should be used in communication research education in Nigeria to complement human research efforts, initiatives and engagements so as to promote originality of research ideas and functional research findings.
3. Transparency and accountability are essential in AI-driven research outcomes. This is achieved through adherence to ethical guidelines and principles governing social science and communication researches, peer review assessment mechanisms and easy access to materials used and publications online.
- 4) It is important to develop, adopt and integrate a functional curriculum and modules on AI into the communication and media research courses in all tertiary institutions, universities and journalism training institutions in Nigeria.
- 5) There should be an increased availability and accessibility to AI infrastructure to communication students, researchers and educators so as to facilitate ethical and responsible utilization of the tools in communication research, teaching and learning.

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