Artificial Intelligence in Communication Scholarship: Implications on the Quality of Research among Emerging Scholars in Daystar University, Kenya

By

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Abstract
The purpose of this article was to investigate the role of artificial intelligence in communication scholarship. The contention of the article is that Artificial Intelligence (AI) is rapidly shaping key sectors globally, with transformative impacts in healthcare, education, finance, and communication. In Kenya, AI adoption is progressing, but challenges such as limited infrastructure, low digital literacy, and policy gaps slow its integration. This study examines AI's role within the academic sphere, specifically focusing on how graduate students at Daystar University, Nairobi, are engaging with AI tools in their communication research. Through descriptive research design, data was collected from graduate students and faculty using questionnaires and interviews respectively to assess their awareness, level of utilization, and barriers to AI adoption. The findings reveal that while most students are aware of basic AI tools like Grammarly and Turnitin, few actively employ advanced AI applications such as natural language processing or AI-assisted content analysis in their research. Barriers include insufficient training, limited institutional support, and restricted access to advanced AI resources. The study concludes that despite the potential for AI to enrich communication research, meaningful utilization remains minimal without targeted interventions. It recommends the integration of AI-focused modules in the curriculum, investment in AI infrastructure, and continuous training to empower graduate students to harness AI effectively in their academic work.

Key words: Artificial Intelligence (AI), AI adoption, AI infrastructure, AI applications, AI in Education, AI in Healthcare, AI technologies, AI in Banking, Defence/Security, Transportation, Manufacturing, Communication

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1. Introduction

1.1 Background of the Study

Artificial Intelligence (AI) has rapidly transformed from a futuristic concept to an active part of everyday life. Globally, AI is now deeply embedded in sectors such as education, healthcare, finance, defence, communication, agriculture, and manufacturing (UNESCO, 2021). In developed countries, AI technologies are driving automation, enhancing decision-making, and improving efficiency. In Africa, and specifically in Kenya, AI adoption is still at an early but growing stage. The Kenyan government, through strategies like the Digital Economy Blueprint (2019), has prioritized the integration of AI and emerging technologies to accelerate economic growth and improve public service delivery. The rise of AI has sparked debates around its benefits and potential risks. While AI offers opportunities for innovation and efficiency, it also raises concerns related to job displacement, ethical dilemmas, data privacy, and security threats. These conversations are not only happening globally but are also becoming increasingly relevant in Kenya, as more industries and learning institutions begin to adopt AI-driven tools and systems.

In the academic sector, particularly in communication research, AI is becoming a critical resource. Graduate students are now using AI-powered applications such as language models, plagiarism checkers, and automated transcription tools to support their research work. However, there is limited empirical evidence on how emerging scholars in Kenya, especially those at institutions like Daystar University, are utilizing these AI technologies in their academic journey. This gap presents an opportunity to investigate AI's specific role in shaping communication research at the graduate level.

1.2 Problem Statement

Although AI is rapidly gaining ground across sectors globally and in Kenya, there is limited research that critically examines its broad impact across multiple industries within the Kenyan context. Additionally, the specific use of AI in communication research among graduate students in Kenyan universities remains underexplored. Without a clear understanding of how these technologies are adopted, utilized, and perceived by emerging scholars, universities and policymakers may miss key opportunities to guide ethical, effective, and meaningful integration of AI in higher education and research.

1.3 Objectives of the Study

Main Objective:

To critically examine the global and local impact of artificial intelligence across key industries and to investigate the utilization of AI in communication research among graduate students at Daystar University, Nairobi.

Specific Objectives:

(i) To explore the global and Kenyan adoption of AI across sectors, including education, defence, security, banking, healthcare, agriculture, and communication.

(ii) To evaluate the benefits and challenges associated with AI adoption both globally and in Kenya.

(iii) To assess the extent to which graduate students at Daystar University utilize AI in their communication research.

(iv) To identify the factors influencing AI adoption among emerging scholars at Daystar University.

(v) To investigate the ethical, academic, and technological barriers faced by graduate students in using AI for research purposes.

1.4 Research Questions

1. How is artificial intelligence being adopted and utilized across key industries globally and within Kenya?
2. What are the perceived benefits and challenges of AI adoption across these sectors?
3. To what extent are graduate students at Daystar University using AI in their communication research?
4. What factors influence the use of AI tools among these students?
5. What ethical concerns and barriers are faced by graduate students in adopting AI for academic research?

1.5 Scope and Delimitation

This study will cover both global and Kenyan perspectives on artificial intelligence adoption across key sectors. The research will analyze industries such as education, defence, security, banking, healthcare, agriculture, and communication. Special attention was given to the utilization of AI in academic research, specifically focusing on graduate students pursuing communication studies at Daystar University, Nairobi. The study did not cover undergraduate students or other faculties outside communication.

1.6 Significance of the Study

This research will contribute valuable insights to policymakers, educators, technology developers, and students by providing a comprehensive understanding of how AI is shaping industries and academic research both globally and locally. For universities, the findings will inform students about the development of policies and training programs that support ethical and effective AI usage among graduate students. For the Kenyan government and industry players, the study will offer guidance on how to balance AI adoption with local realities such as job security, data protection, and capacity building.

2. Literature Review
2.1 AI Adoption in Kenya: Overview
Chege (2024) offers one of the most comprehensive assessments of generative AI in Kenya, highlighting its potential to fuel innovation and productivity but also noting barriers such as lack of strategic planning, skills shortages, data security and ethical risks. He stresses the need for policies and capacity-building to fully realize AI's benefits. UNESCO's 2023 Oxford Insights AI Readiness Index places Kenya **6th in Africa**, noting its strong innovation

capacity, 57.9 scientific publications per million people, but pointing out that R&D investment stands at 0.8% of GDP, below the global recommended 2%.

2.2 AI in Education: Global and Kenyan Perspective

A **systematic review by Owidi (2025)** examines Kenya's readiness to adopt AI in education. The study analyzed 214 documents and found major gaps in infrastructure between urban vs rural areas, insufficient teacher digital literacy, and accessibility issues for learners with disabilities. Recommendations include infrastructure expansion, teacher development, and inclusive AI design. The Africa Population and Health Research Centre (APHRc, 2025) reports that Kenya's competency-based curriculum has enabled the use of AI-driven EdTech platforms, like M-Shule and Eneza, to support personalized learning, speech-to-text, and accessibility tools

2.3 AI in Healthcare and Public Health

Ndembi et al. (2025) call for an ethical framework to guide AI integration in African health systems, addressing emergency response, clinical diagnostics, and public health surveillance. They emphasise governance, data standards, and capacity-building. A *State of AI in Healthcare in Sub-Saharan Africa* report (2024) outlines progress in telemedicine, diagnostics, and disease surveillance but warns that significant infrastructure, digital education, and ethical challenges remain. Etori et al. (2023) argue that while AI can enhance diagnostics, personalized medicine, and healthcare access in Africa, success requires coordinated efforts from governments, the private sector, and academia

2.4 Broader Sectoral Applications and Challenges

A 2025 report on Kenya's National AI Strategy emphasizes that AI has already begun transforming critical sectors agriculture, healthcare, and finance, but sustainable integration demands robust infrastructure, regulation, and local capacity. A 2022 Paradigm Initiative analysis highlights Kenya's data deficits and STEM gaps. Only 25% of university graduates have STEM backgrounds, and the absence of a comprehensive AI regulatory framework complicates ethical use and innovation.

2.6 Sectoral Applications of AI: Banking, Defence, Transportation, Manufacturing, Communication

AI in the Banking Sector

Artificial intelligence is increasingly becoming central to the banking and financial services industry in Kenya and globally. Kenyan banks have adopted AI technologies to enhance fraud detection, streamline customer services, and develop intelligent credit scoring models. For example, mobile-based loan apps like M-Shwari and Tala now use AI-driven algorithms to assess a borrower's creditworthiness based on non-traditional data such as mobile money transaction patterns. This has significantly improved financial inclusion, particularly among the unbanked population. However, concerns about data privacy and the potential for algorithmic discrimination remain largely unaddressed within the Kenyan regulatory environment (Kiarie & Mwangi, 2023).

In the global context, AI applications in banking have expanded to include high-frequency trading, risk modelling, and personalized financial advice through AI chatbots. While these innovations improve efficiency and accessibility, international reports warn about emerging threats such as AI-powered cyberattacks targeting financial institutions,

requiring continuous investment in cybersecurity frameworks (World Economic Forum, 2023).

AI in Defence and Security

The defence and security sector has rapidly integrated AI to improve national security capabilities. Globally, countries like the United States and China are using AI for autonomous drones, facial recognition, cybersecurity, and predictive threat analysis. In Kenya, the government has begun experimenting with AI-based surveillance systems and smart border monitoring, especially in response to terrorism threats from groups like Al-Shabaab. AI's ability to process large datasets in real-time is being used to monitor communication networks and detect suspicious activity. However, this raises critical ethical concerns about privacy, surveillance overreach, and potential abuse of state power (Mueller, 2023; Adede, 2024).

Additionally, the deployment of AI in predictive policing may help prevent crime, but there is growing global evidence that such systems can perpetuate racial and social profiling if not carefully regulated (Smith et al., 2023). Kenya currently lacks specific AI governance laws that address such security applications, which could lead to unregulated expansion and potential misuse.

AI in Transportation

In the transportation sector, artificial intelligence is driving innovation in smart mobility solutions. Globally, AI is at the core of autonomous vehicles, intelligent traffic management, and predictive maintenance systems. In Kenya, though fully autonomous vehicles are still far from deployment, AI is contributing to traffic flow optimization, especially in urban centers like Nairobi. Smart traffic lights and AI-powered traffic cameras are helping to reduce congestion and improve road safety (Nduta & Karani, 2024). Ride-hailing platforms such as Uber and Bolt are already using AI algorithms to match drivers with riders, optimize routes, and predict demand peaks. Moreover, the potential for AI to support predictive maintenance of public transport vehicles could significantly reduce downtime and improve service delivery. However, infrastructure limitations, poor data quality, and limited digital skills in transportation management agencies continue to restrict the scale of AI deployment in this sector (Muthomi, 2024).

AI in Manufacturing

Artificial intelligence is transforming manufacturing processes globally through robotics, machine vision, and predictive analytics for supply chain optimization. Although Kenya's manufacturing sector is not yet fully automated, there are emerging applications of AI-driven quality control systems and smart assembly lines in some of the country's leading industrial parks. There are also AI is explorations to improve inventory management and forecast production demands with higher accuracy (Okoth, 2024). Internationally, smart factories employing AI and Internet of Things (IoT) devices are achieving unprecedented levels of efficiency, but concerns remain regarding potential job losses due to automation. In Kenya, this presents a critical debate as the push for industrial growth must be balanced with the need to protect employment opportunities for low-skilled workers (World Bank, 2024).

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AI in Communication

AI is reshaping the communication landscape both globally and in Kenya. AI-powered tools like ChatGPT, Google Bard, and local chatbots are increasingly used for content generation, customer support, and language translation. In Kenya, telecommunications companies are utilizing AI to improve customer interaction, automate responses, and enhance fraud detection in mobile money services (Atieno & Musau, 2024). More significantly, AI is revolutionizing communication research by providing advanced tools for sentiment analysis, big text mining, and real-time social media monitoring. This is particularly relevant to graduate students and emerging scholars at institutions like Daystar University, who are increasingly integrating AI tools into their academic inquiries, particularly in analyzing communication trends, public opinion, and digital narratives. Despite these advancements, the risks of misinformation, algorithmic bias in content curation, and over-reliance on AI-generated data present new challenges for both the media industry and academic researchers (Kimani, 2023; Nyaga & Wambua, 2024).

Final Thoughts on Sectoral Applications

Across all sectors, banking, defence, transportation, manufacturing, and communication, AI is creating opportunities to improve efficiency, decision-making, and service delivery. However, the literature consistently emphasizes that Kenya's success in fully leveraging AI depends on overcoming key barriers such as inadequate infrastructure, limited local expertise, insufficient data governance, and the absence of clear AI regulatory frameworks. These sector-specific observations provide a strong foundation for this study's focus on examining AI's role within the academic space, particularly among graduate students in communication research at Daystar University.

Research Methodology
3.1 Introduction

This chapter outlines the research design, target population, sampling procedures, data collection methods, instruments, validity and reliability measures, data analysis techniques, and ethical considerations that guided this study. The study seeks to investigate the adoption and application of Artificial Intelligence (AI) tools among graduate students in communication research at Daystar University.

3.2 Research Design

The study adopted a **descriptive research design**. This design was appropriate because it allowed the researcher to systematically describe the current status of AI adoption among graduate communication students without manipulating the study environment. A descriptive design provided the flexibility to capture both quantitative and qualitative insights regarding student experiences, AI applications, and perceived challenges. Recent research affirms that descriptive designs are effective in mapping emerging technological trends in educational settings (Njoroge & Wambua, 2023).

3.3 Target Population

The target population for this study comprised all graduate students enrolled in communication programs at Daystar University. As of the 2024 academic year, Daystar University reported approximately 400 graduate communication students across different specializations (Daystar University Academic Report, 2024). This population was selected

because these students are directly engaged in academic research where AI tools are increasingly relevant.

3.4 Sampling Procedure and Sample Size

The study employed stratified random sampling to ensure representation across the various graduate communication specializations, such as media studies, corporate communication, and development communication. From the target population of 400 students, a sample of 120 students was selected. This sample size was determined using Yamane's formula (1967) for finite populations, which has been widely used in recent communication studies (Ouma & Kipkoech, 2023). Stratification ensured that each communication specialization was proportionally represented in the final sample, minimizing selection bias. Additionally, five faculty members were selected for key informant interviews to provide expert perspectives on AI's integration in student research.

3.5 Data Collection Methods

The study utilized **both primary and secondary data collection methods** to gather comprehensive and balanced insights.

3.5.1 Primary Data

Primary data were collected through structured questionnaires and semi-structured interviews.

(i) **Questionnaires:** These were administered to the 120 graduate students and contained both closed and open-ended questions to capture quantitative data (such as the extent of AI tool usage) and qualitative data (such as personal experiences and attitudes towards AI).

(ii) **Interviews:** Five in-depth interviews were conducted with faculty members specializing in communication research and technology. The interviews explored expert opinions on the benefits, challenges, and ethical implications of AI adoption in student research.

3.5.2 Secondary Data

Secondary data were obtained from recent scholarly articles, policy reports, and institutional documents that address AI adoption in higher education. Special attention was given to sources published within the last five years to ensure relevance and accuracy (Mutisya & Kamau, 2024).

3.6 Data Collection Instruments

The study used **two instruments:**

(i) **Questionnaire:** This had five key sections: demographic information, awareness of AI tools, extent of AI tool usage, perceived benefits, and perceived challenges.

(ii) **Interview Guide:** This provided open-ended questions to guide conversations with faculty members, focusing on their observations about student engagement with AI, institutional support, and ethical considerations.

Both instruments were developed based on recent studies on AI in education and communication research (Chege & Omondi, 2024).

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3.7 Validity and Reliability

3.7.1 Validity
Content validity was ensured by consulting **two AI and communication research experts** to review the questionnaire and interview guide. Their feedback was used to adjust the questions for clarity, relevance, and alignment with the study objectives. According to Onyango et al. (2023), expert review significantly enhances the credibility of research tools in education-based studies.

3.7.2 Reliability
A **pilot test** was conducted with 12 graduate students (10% of the sample) who were not part of the final study. The reliability of the questionnaire was assessed using **Cronbach's alpha**, which yielded a coefficient of 0.81, indicating high internal consistency. This threshold aligns with recommended standards for educational research (Wekesa & Chebet, 2023).

3.8 Data Analysis
Quantitative data from the questionnaires were coded and analyzed using **descriptive statistics** (frequencies, percentages, and mean scores) with the help of SPSS software. This enabled a clear presentation of AI adoption patterns and student attitudes. Qualitative data from open-ended questionnaire items and interviews were analyzed thematically. Thematic analysis involved careful reading, coding, and categorization of recurring themes to generate deeper insights into student experiences, perceived challenges, and faculty perspectives. Recent communication research supports the use of this mixed-methods approach for investigating complex topics like technology adoption in educational contexts (Mburu & Kariuki, 2024).

3.9 Ethical Considerations
This study upheld strict ethical standards throughout the research process:
  (i) **Informed Consent:** All participants were fully briefed on the purpose of the study, their voluntary participation, and the right to withdraw at any point without penalty.
  (ii) **Confidentiality:** Participant identities were anonymized, and all responses were treated with strict confidentiality.
  (iii) **Academic Integrity:** The researcher ensured that all secondary sources were properly cited, and data were collected and reported accurately to avoid misrepresentation.

Ethical approval for this study was granted by the Daystar University Ethics Review Committee prior to data collection. Recent studies highlight the importance of obtaining formal ethical clearance and safeguarding participant rights when researching sensitive and emerging topics like AI (Obuya & Kendi, 2024).

3.10 Summary
This chapter detailed the research design, target population, sampling techniques, data collection methods, instruments, validity and reliability measures, data analysis approaches, and ethical considerations. The methodology adopted ensured a rigorous, credible, and ethical process for exploring the adoption of AI tools among graduate communication students at Daystar University.

Data Analysis, Presentation, and Interpretation
4.0 Introduction

This chapter presents the data collected, analyzes the findings, and interprets the results in relation to the research objectives. The primary focus is to understand the utilization of Artificial Intelligence (AI) in communication research among emerging scholars, specifically graduate students from Daystar University, Nairobi. The data is presented thematically to align with the key areas of interest: level of awareness, extent of AI utilization, factors influencing adoption, perceived benefits and challenges, and ethical considerations.

4.1 Response Rate

The study targeted 120 graduate students from the School of Communication at Daystar University. Out of these, 74 students responded, yielding a response rate of 62 %. This response rate was considered adequate for the study as it surpassed the 50 % minimum threshold recommended for academic surveys (Mugenda & Mugenda, 2019).

4.2 Demographic Characteristics of Respondents

The demographic profile captured included age, gender, year of study, and area of specialization.

  (i) **Gender Distribution:** Majority of the respondents were female followed by the males.
  (ii) **Age Distribution:** Most respondents fell within the 19-55 years.
  (iii) **Year of Study:** Respondents were evenly distributed across first, second, and third-year graduate levels.
  (iv) **Specialization:** Most students specialize in Corporate Communication, Media Studies, and Development Communication.

This diversity provided a balanced view across disciplines within the communication field.

4.3 Awareness and Understanding of AI

The majority of respondents demonstrated basic awareness of AI concepts. Students frequently mentioned tools such as ChatGPT, Grammarly, and AI-driven data analytics platforms. However, a smaller proportion could articulate AI's advanced capabilities like machine learning algorithms and natural language processing.

4.4 Utilization of AI in Communication Research

Respondents reported using AI for various research activities:

  (i) Literature review assistance (e.g., AI-powered search engines).
  (ii) Data analysis using AI-based qualitative software.
  (iii) Proofreading and grammar correction using platforms like Grammarly.
  (iv) Summarization and paraphrasing support.

However, in-depth AI applications such as predictive analytics, sentiment analysis, or natural language generation were rarely utilized, primarily due to a lack of exposure and limited training.

4.5 Factors Influencing AI Adoption among Graduate Students
Several key factors were found to influence the adoption of AI in communication research:

  (i) **Access to Technology:** Reliable internet and device availability were significant enablers.
  (ii) **Training and Skills:** Students with prior exposure to digital tools were more likely to adopt AI.
  (iii) **Faculty Support:** Encouragement from supervisors influenced uptake positively.
  (iv) **Perceived Complexity:** Many students reported that AI platforms seem intimidating without proper guidance.

4.6 Perceived Benefits of AI in Research
Respondents highlighted several benefits of using AI in their research:

  (i) Increased efficiency in literature searches and content organization.
  (ii) Enhanced accuracy through AI-powered grammar and plagiarism checkers.
  (iii) Better time management due to automation of repetitive tasks.

4.7 Challenges Encountered
Despite the benefits, the following challenges were reported:

  (i) Limited AI literacy and insufficient training sessions within the university.
  (ii) Fear of academic dishonesty accusations when using AI-assisted tools.
  (iii) Technical barriers such as unreliable internet connectivity.

4.8 Ethical Considerations
Respondents expressed concerns about:

  (i) Potential overreliance on AI-generated content.
  (ii) The risk of plagiarism if AI is misused.
  (iii) Data privacy when using AI-powered cloud applications.

4.9 Interpretation of Findings
The study reveals that while graduate students at Daystar University are increasingly integrating AI into their research practices, usage remains largely basic and superficial. The gap between awareness and advanced application is significant and is influenced by access, training, institutional support, and personal confidence.

AI is reshaping communication research globally, but local challenges in Kenya—particularly infrastructure, digital literacy, and ethical policy frameworks—continue to limit its full potential. The findings underscore the need for targeted capacity building, updated curricula, and clearer ethical guidelines to enable responsible and effective use of AI among emerging scholars.

Summary, Conclusion, and Recommendations
5.1 Summary of the Study
This study set out to investigate the broad applications, advantages, and challenges of Artificial Intelligence (AI) both globally and within the Kenyan context, with particular attention to sector-specific impacts such as in education, healthcare, defense, banking, transportation, manufacturing, and communication. The research began with an extensive review of the international and local AI landscape, revealing a rapidly expanding field that

holds both transformative potential and significant ethical, regulatory, and infrastructural concerns.

The Kenyan case is unique. While the country is steadily adopting AI-driven solutions across sectors, critical gaps in infrastructure, data management, digital literacy, and regulatory oversight continue to slow down optimal utilization. Importantly, the study emphasized how AI is reshaping the educational landscape, but uneven access and low AI integration levels in communication research among emerging scholars remain concerned.

The study specifically focused on graduate students at Daystar University, Nairobi, within the School of Communication, to assess how they are leveraging AI tools in their academic research. Data was collected from a representative sample of students' using questionnaires, interviews, and document analysis. The findings indicated that while awareness of AI tools is relatively high, actual deep-level utilization in communication research remains limited, largely due to knowledge gaps, training deficiencies, and limited institutional support.

5.2 Key Findings

(i) **Global and Local AI Trends:** AI is rapidly transforming education, defence, banking, healthcare, and other industries globally. Kenya is following this trend but at a slower pace due to infrastructural, policy, and skill-based constraints.

(ii) **Sectoral Impact in Kenya:** AI-driven educational tools such as M-Shule and Eneza are gaining ground, but there is still poor integration in higher education, especially in communication disciplines.

(iii) **Adoption Among Graduate Students:**
Graduate students at Daystar University have moderate awareness of AI tools like Grammarly, Turnitin, and AI-based transcription services. However, most use these tools only for basic functions like grammar checks and plagiarism screening rather than in-depth communication research tasks like data mining, content analysis, or sentiment tracking.

(iv) **Barriers to Utilization:**
The main barriers include lack of specialized AI training, limited access to advanced AI tools, and minimal institutional promotion of AI in research methodologies.

5.3 Conclusion

Artificial Intelligence presents immense opportunities across all sectors globally and locally. In Kenya, though, the progress is somewhat fragmented due to challenges in infrastructure, regulation, and capacity building. While some sectors like banking and healthcare are making steady progress, others such as defense, transportation, and communication research are still in the early stages of adoption.

Specifically, among graduate students at Daystar University's School of Communication, AI remains underutilized in research despite its potential to revolutionize academic inquiry. The findings suggest that while students are aware of AI's existence and occasionally use common tools, they are not fully integrating AI-driven methodologies into their research processes. This underutilization highlights a gap in both curriculum design and institutional investment in AI resources.

5.4 Recommendations

For Universities (Including Daystar University)

(i) Curriculum Enhancement:

Integrate AI-specific modules and practical AI-based research methodologies into the graduate communication programs to improve technical literacy and application depth.

(ii) Training Workshops:

Conduct regular AI workshops, seminars, and hands-on sessions to familiarize students and faculty with the potential of AI in communication research.

(iii) Invest in AI Tools:

Universities should invest in advanced AI research software, particularly those relevant to communication studies, such as natural language processing (NLP) tools, sentiment analysis software, and AI-based qualitative data analysis systems.

For Graduate Students

(i) Self-Directed Learning:

Students should pursue additional AI courses and certifications, particularly focusing on AI's application in research, communication, and data analysis.

(ii) Peer Collaboration:

Students should form AI-focused study groups or communities within the university to share knowledge and experiences in using AI tools for research.

For Policy Makers

(i) National AI Policy:

Develop and implement a comprehensive AI policy that promotes ethical usage, addresses regulatory gaps, and provides clear guidelines for AI adoption in education and research.

(ii) Funding and Incentives:

Provide research grants and financial incentives for universities that invest in AI research and promote its integration in communication studies and other academic fields.

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