

Exploring the Potential of Artificial Intelligence for Supporting Indigenous Language Journalism Pedagogy in Nigeria

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Abstract

The African continent has more than 2100 indigenous languages, but many of them are not well-represented in the media. Artificial intelligence (AI) technology offers an opportunity to digitally incorporate these languages into news media and enable journalism pedagogy that emphasizes their use. However, there is limited research on how to integrate AI into journalism training in Africa, especially for indigenous languages. This study evaluates the benefits and challenges of integrating AI tools into journalism training in Nigeria to promote productivity and inclusion of indigenous communities in media content. Mixed research design via in-depth interviews was used to collect data from journalism schools in Nigeria, semi-structured survey with current journalist and secondary data available via AI tools. The findings suggest that using AI tools in journalism education can improve the quality of journalism and equip journalists with skills needed to succeed in the digital age. However, there is no immediate urgency to integrate native language journalism beyond entry level. A bureaucracy-free dynamic curriculum is needed to train budding journalists and retrain veteran practitioners, with funding for recent tools. Future research should broaden the scope and sample size to produce comprehensive and generalizable results for other AI contexts within and beyond Nigeria.

Keywords: Indigenous Languages, Journalism Training, Artificial Intelligence, Digital Media.

INTRODUCTION

Journalism pedagogy in Nigeria is, as elsewhere in the world, at crossroads, due to changing socio-economic and political circumstances. To understand journalism education in Africa, there is a need to recognise that it is a product of larger social and technological conditions (Banda, 2015). One of such conditions is that the African continent has over 2100 indigenous languages, many of which are not adequately represented in the media (Eberhard et al., 2019). Similarly, the rise of Artificial Intelligence (AI) poses opportunities for the future of work. Therefore, journalism education in Africa must contend with defining a new academic identity for itself, extricating itself from dependency on Western oriented languages, and models of journalism training (Msimanga, Tshuma and Matsilele, 2022). To build and revamp curricula sufficient in training current and future journalists, a myriad of considerations needs to be made to create a technology backed African experience that involves delivering journalistic benefits to the last mile.

AI, smart algorithms, and automatic processes are penetrating all aspects of human life, communications and organizations, dramatically changing media platforms as well as the relations between the media and their audiences. The general development of synthesized neural networks that comprises generative AI supports chat, answering questions, generating images, audio and text (Shafeeg et al., 2023). Incredible improvements have been seen from previous Generative Pre-trained Transformers (GPTs) and are now available as consumer tools like ChatGPT and Bard. These state-of-the-art innovations in AI are causing media companies to employ robot journalists to discover hidden trends and insights by analyzing huge databases, and write narratives without human involvement. Conversely, AI involvement in investigative journalism and storytelling, poses a serious threat

to the professional future of human journalism and its primary mission as guardians of democracy.

PROBLEM STATEMENT

AI technology offers an opportunity to address this issue by digitally incorporating indigenous languages into news media and enabling journalism pedagogy that emphasizes their use. Despite the potential benefits of AI technology in other climes, there is limited research on how to effectively integrate it into journalism training in Africa, particularly for indigenous Nigerian languages. This study aims to explore this research gap by investigating the potential of AI tools in supporting productivity and the use of indigenous languages for journalism education in Nigeria.

RESEARCH QUESTIONS

1. How can AI tools facilitate the use of indigenous Nigerian languages in journalism classrooms and newsrooms?
2. What are the perceptions of journalism trainers in Nigeria towards using AI tools to support media practitioner's education?
3. What are the potential challenges and benefits of integrating AI tools an indigenous languages, in journalism schools to promote productivity and inclusion of indigenous communities in media content?

LIMITATIONS OF THE STUDY

Considering the scope covered in this study, the limitations are related to potential issues of limited generalizability, sample bias, ethical considerations, and time constraints. These factors could affect the study's ability to produce results that are applicable beyond the specific context of indigenous languages and journalism education in Nigeria.

LITERATURE REVIEW

The media has traditionally been seen as the fourth estate, an institution for holding governments and social institutions accountable through information dissemination, public discourse, and education (Leask, 2011). However, the dominance of Western-centric approaches to journalism has had far-reaching implications for journalism education, quality standards, ethics, research, and the legitimacy of non-Western journalism practices. Efforts to challenge this model have led to suggestions such as hands-on learning, greater diversity in teachers and newsroom staff, and more emphasis on current practices (Callison and Young, 2020). To effect real change, it is crucial to address the issue at different levels of media content generation (Douglas, 2021).

The development of digitalization, internet, and mobile technologies in the late 20th and early 21st centuries led to the process of media convergence, where the boundaries between various forms and types of media were blurred, leading to new forms of content provision (Baranova et al. 2022). Rapid knowledge production has become mainstay through Artificial Intelligent technologies and its subset Natural Language Processing (NLP). AI, according to Papadimitriou, (2016), is being increasingly used in newsrooms as it offers greater productivity and efficiency in content production. Computational journalists and engineers input data and algorithms into computer systems, which use a pre-programmed structure and formula to automatically generate comprehensible news for the audience through NLP (Barrat, 2013).

These days journalists can use AI-generated smart templates to gather and disseminate news reports easily on various issues. Galily's (2018) work affirms that AI has radically transformed journalism. According to Schmelzer (2018),

"Editor" provides on-the-spot research, content suggestions, fact-checking, for the New York Times. Kobie (2018) notes that the Washington Post has also developed an in-house robot reporter called "Heliograf" that has generated hundreds of machine-written short snippets by analyzing sports data and structuring narratives. However, as this technology serves communities across the world in English, Spanish, French, Hindi and others, it is yet to serve native communities in Africa even those languages spoken by millions of its people.

Africa, a continent of over 1.2 billion people (World Bank, 2020), is a multilingual, multi-ethnic continent due to its various cultural, ethnic clusters, and dialects with 2144 living languages (Eberhard et al., 2019). There are at least 35 languages in Africa that have more than one million speakers. Ten of which are spoken in Nigeria (Osborn, 2015). Nigerian languages are classified as low-resourced, leading to limited access to online information. Indigenous media relies on oral reportage, except BBC's online channels.

THEORETICAL FRAMEWORK

Diversity Pedagogy Theory (DPT) emphasizes the critical role of culture in the teaching-learning process (Sheets, 2009). DPT highlights the importance of gaining knowledge about diverse cultures and using culturally responsive methods to craft lessons. The theory aims to provide teachers with pedagogical tools to develop desirable dispositions, a culturally inclusive knowledge base, and culturally responsive teaching methods (Devine and Ash, 2022). DPT may be useful in researching the potential of AI for teaching native Nigerian languages in journalism schools. It highlights culture's importance in the learning process.

Adaptive Structuration Theory (AST) was adapted from Giddens' theory (DeSanctis and

Poole, 1994) to examine communication within groups utilizing information communication technology (ICT). The theory assesses the technocentric outlook of technology usage and highlights the socio-cultural facets (Ali et al., 2022). AST examines how people interact with advanced ICTs and how ICTs shape behaviour. It's a feasible approach to study NLP's effect on digitizing native Nigerian languages for journalism.

METHODOLOGY

This study explores the potential of AI tools in supporting the use of indigenous languages for journalism training in Nigeria. A sequential exploratory approach using mixed-method research design was employed, and data were collected through purposive, random and snowball sampling techniques. Interviews were conducted with one teacher and snowballed into four. Secondary data was gotten with ChatGPT and GPT3.5. Finally, surveys were deployed to reach 400 journalists in newsrooms, a sample size calculated via Taro Yamane from a 100,000 estimated population (NIJ, 2023). However, only 270 were valid entries. Qualitative data collected were analysed using Nvivo software while quantitative were analyzed with SPSS.

DATA PRESENTATION

Audio recordings of all the online discussions held with journalism educators from the Nigerian Institute of Journalism (NIJ) were transcribed into Microsoft Word to ease coding and subsequently uploaded to Nvivo 11 for thematic analysis as shown in Table 1. Secondary data was also analysed thematically, while the survey analysis is tabulated in Table 2. The respondents are represented in pseudonyms in line with ethical research practices. All data are interpreted to draw on some useful conclusions from them.

Table 1: showing the in-depth interview respondents.

s/n	Respondent Pseudonym	Institution	Experience Level
1	Respondent One	NIJ	Director
2	Respondent Two	NIJ	Director
3	Respondent Three	NIJ	Senior Lecturer
4	Respondent Four	NIJ	Lecturer One

The resultant themes from the thematic analysis include: low resourced languages, curriculum, funding, unemployment, retraining, fake news, language processing

Table 2: showing analyzed details of survey respondents.

Survey Details	Responses	%	
Respondents	270	67.5	
Gender	Female	37	
	Male	63	
Age	35-44	48.1	
	Others	51.9	
Language Diversity	Hausa	7.4	
	Igbo	29.6	
	Yoruba	59.3	
	Pidgin	37	
	Ibibio	11	
Native Language	Importance	Strongly agree	51.9
		Agree	37
	Proficiency	Intermediate	63
		Expert	22.2

	Usage	Never	44.4
		Rarely	29.6
Artificial Intelligence	Received training	No	66
		Yes	32
	Usage	Sometimes	37
		Always	7.4
	Challenges for AI/Native Fusion	Cost	37
		Devices	11
		Low resource	44
		Knowledge	7.4

The analyzed data from the survey as shown in Table 2, represents the responses from practicing and trained Nigerian journalists about their perspectives and experiences with native languages and AI.

DISCUSSIONS

RQ1: Based on the thematic analysis from the respondents coupled with feedback from most recent AI technology, GPT3 Whisper, “AI tools can be used to facilitate the use of indigenous Nigerian languages in journalism classrooms and newsrooms but at a medium accuracy” (OpenAI, personal communication, March 18, 2023). AI is beneficial as tools created from well trained versions can be used for automated translation, natural language processing, voice recognition, and text-to-speech systems. “This application of AI tools can promote linguistic diversity and help news organizations reach a broader, rural audience especially in the current era of clutter” (Respondent One, personal communication, March 4, 2023). The diversity pedagogy theory emphasizes the importance of promoting multiculturalism and diversity in education, which can be achieved by incorporating AI tools that support the use of indigenous languages in journalism. However, as

the most advanced only supports four native Nigerian languages “Hausa, Igbo, Yoruba, Nigeria Pidgin in translation and marginal speech services (OpenAI, personal communication, March 17, 2023), many questions linger on the limitation of the diversity sought out. The use of AI tools in journalism can provide productivity benefits in curriculum development, newsroom summaries, and content generation. Voice recognition and text-to-speech systems can also help promote the use of indigenous Nigerian languages in journalism. However, the data in Table 2 shows that there is barely any training as 66 percent have never received AI usage training in school or at work.

RQ2: Based on the responses, the perceptions of the respondent journalism trainers in Nigeria towards using AI tools, largely focuses on fake news and the claim of expensive paywalls and job security. “Google translate is not accurate” (Respondent Three, personal communication, March 6, 2023). “Chat GPT is expensive, I heard it’s \$20 a month”. “The automated AI tools around the world..., we can’t afford it” (Respondent Four, personal communication, March 6, 2023). “People are using AI to generate fake news, it should be unethical” (Respondent One, personal communication, March 4, 2023). “Some AI is available, but how do I type easily in Yoruba” (Respondent Four, personal communication, March 6, 2023). The responses discuss the varying perceptions of journalism trainers regarding the potential of AI technology to enhance their work, with some viewing open-source automated news writing software and data analytics software as useful tools. However, the perceptions vary depending on the trainers' level of experience and familiarity with AI tools. On the other hand, journalists in Nigeria mostly use AI for transcribing recording as 29.6% rarely use AI tools while 14.8% never use them.

As expressed by Kobie (2018), the use of AI tools in journalism education is generally seen as a

positive development. Respondents have positive perception majorly due to the possibilities to translate and transcribe native languages. Adaptive Structuration Theory (AST) suggests that technology shapes and is shaped by social structures. AI tools can be integrated into journalism education to adapt to the changing technological landscape of the industry. However, the use of AI tools requires a re-evaluation of social structures and interactions in Nigerian journalism. To propagate an indigenous perspective, a commitment to rapid retraining of journalists is needed. AI tools can help journalism education deliver the latest technological advancements and prepare journalists for a rapidly evolving media industry. Additionally, AI tools can be used to analyze data and identify trends, which can help journalists develop more accurate and insightful stories. However, some concerns were raised regarding the potential impact of AI on job security in the industry, and the need for journalists to maintain ethical standards in the use of AI tools. Overall, the use of AI tools in journalism education is seen as an opportunity to improve the quality of journalism and equip journalists with global skills needed to succeed in a digital age.

RQ3: The discussions in this study elicited contrasting emotions and responses on the benefits and challenges of AI adoption in journalism training. Among the respondents, similar viewpoints were shared about the need for drastic changes in the curriculum at NIJ. *“The institutional curriculum needs to change and remain as dynamic as the rapid advancement in new media.... It should also involve job retraining for practicing practitioners”*. (Respondent 3, personal communication, March 6, 2023). *“Thankfully, these digital platforms can help with our local languages. Our curriculum must capitalize on this and offer inclusive communications beyond the first semester course it currently is”* (Respondent One, personal

communication, March 4, 2023). The emphasis for curriculum change goes hand in hand with the need for funding journalism training centers in order to train and equip teachers to pass up-to-date knowledge.

However, as the study expresses the perspectives of the trainee as well, the data shows that 44% of respondents are concerned by the low AI and digital resources available in native languages while 37% are concerned about cost.

Furthermore, unemployment is a major worry in the minds of many educators. *“If we fully accept this AI, what is going to happen to all our jobs after it is done spying on me”* (Respondent One, personal communication, March 4, 2023). *“You see, not all technology should be hurriedly adopted, we have to be careful so we don’t cause wahala in society where people are jobless already”* (Respondent 2, personal communication, March 4, 2023). The explanatory power AS theory provides is important to consider how the integration of AI tools in journalism may impact the social structures and interactions within the industry. For example, the use of AI tools may shift the balance of power between journalists and technology, requiring new norms and practices to be developed that reflect this change. Also, AI tools are only as unbiased as the data they are trained on, and if the data contains biases, the tools will perpetuate them. This underscores the need for journalists to maintain ethical standards and critically evaluate the output of AI tools.

CONCLUSION

In conclusion, the use of AI tools in journalism classrooms can facilitate the use of indigenous Nigerian languages and promote linguistic diversity, while also offering productivity benefits such as automated translation, natural language processing, voice recognition, and text-to-speech systems. However, the limited support

for native Nigerian languages and concerns about job security and ethical standards must be addressed to get the educators and newsrooms to buy in. Publishers could be swayed by data-backed profitability possibilities.

Further, to integrate AI tools effectively, there is a need for a dynamic curriculum that includes knowledge for budding journalists and on-job retraining for veteran practitioners, and funding to train and equip teachers with up-to-date knowledge. The use of AI tools requires a re-evaluation of social structures and interactions in journalism to reflect globalization and the evolving role of technology. Additionally, there is a need to be cautious about the adoption of AI tools to prevent societal challenges such as unemployment.

Accuracy, brevity, and clarity are essential principles (ABC) of effective communication in journalism. Despite the current shortcomings of AI and hardware tools to fully support native languages, and the ethical challenges, AI can support journalism educators by providing tools and techniques to help students analyse and improve their writing, such as automated text summarization, language translation, sentiment analysis, and grammar checking. In turn, improvement requires data. Scholars and journalists need to utilise AI tools carefully while support it with resources and feedback to fill its current gaps.

Finally, this study's scope creates potential issues of limited generalizability, sample bias, ethical considerations, and time constraints, which could affect the study's ability to produce results that are applicable beyond its specific context. Therefore, future research should aim to broaden the scope and sample size, address ethical considerations, and account for time constraints to produce more comprehensive and generalizable results that can be applied to other contexts beyond Nigeria.

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