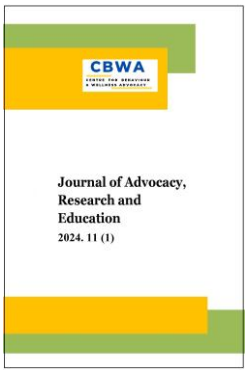
Publisher: Centre for Behaviour and Wellness Advocacy, Ghana
Co-publisher: Cherkas Global University, USA
Has been issued since 2014
ISSN 2410-4981. E-ISSN 2508-1055
2024. 11(1): 4-6

DOI: 10.13187/jare.2024.1.4

Journal homepage:
http://kadint.net/our-journal.html



Editorial

Artificial Intelligence Use, Technostress, and Academic Productivity among Students in Sub-Saharan Africa

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Abstract

Globally, artificial intelligence is being developed and used at a growing speed in education settings. Notwithstanding artificial intelligence's immense opportunities for stakeholders in education, especially students, worries regarding its misuse, negative health impacts, and poor academic productivity outcomes are still emerging. Although research focusing on this subject matter is gaining attention in developed countries, little is known about it in Sub-Saharan Africa. This editorial opens a voice to the ongoing conversations to explore students' attitudes towards artificial intelligence use, the prevalence of technostress, and the impact on academic productivity among students in Sub-Saharan African countries. It further delves into the complexities of artificial intelligence adoption in Sub-Saharan African educational settings and the need to leverage these technologies effectively, notwithstanding the actual or perceived challenges students face.

Keywords: artificial intelligence use, academic productivity, Sub-Saharan Africa, students, technostress.

1. Artificial Intelligence in Educational Landscapes of Sub-Saharan Africa

Like all settings globally, the educational landscapes of Sub-Saharan Africa (SSA) have encountered the age of artificial intelligence technology growth. As a region with unique socio-economic and geopolitical challenges, education is also faced with diverse challenges. From infrastructure, funding, and policies to subtle challenges like post-colonial impacts on education, there is a recent emerging wave of artificial intelligence (AI) use and its associated issues. As one region that has faced major health crises like Ebola and COVID-19, conflicts, food insecurity, and poverty, AI can help mitigate quality gaps in an otherwise resource-constrained African environment (Dalberg, 2022).

The growth of AI in education cannot be underestimated in SSA, although the entire continent faces numerous challenges regarding technology growth that require urgent, practical

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Received: 24 March 2024 Revised: 02 April 2024 Accepted: 02 April 2024 Published: 31 April 2024

and sustainable solutions. Notably, Chen et al. (2023) identified the essential contributions of pedagogical chatbots in supporting students' success. A systematic review by González-Calatayud et al. (2021) also observed the valuable role of AI in formative evaluation and automatic grading of students. Furthermore, AI-powered solutions can enhance the quality of teaching and learning in African settings by supporting teachers' preparedness for content delivery and facilitating time-saving assessments through automatic grading (Dalberg, 2022). However, they raised a gap for researchers to focus on the specific educational aspects of AI instead of its technical development (González-Calatayud et al., 2021).

2. Attitudes on Artificial Intelligence Use and Related Factors

In SSA, where digital connectivity is rapidly increasing, leveraging AI technologies in education can potentially bridge educational gaps and enhance learning outcomes. However, this cannot be done without fully considering the specific demographic differences and challenges faced in this region, such as limited infrastructure and varying levels of awareness about AI (Dalberg, 2022). By addressing these factors and tailoring AI interventions to meet the needs of students in SSA, educational institutions can harness the potential of AI to improve academic productivity and create more inclusive and equitable learning environments.

One crucial contextual factor worth exploring is the attitudes of educational stakeholders like students toward AI use. Although multifaceted, attitudes towards AI use among students in SSA have been studied less. While some students in the region embrace the potential of AI to enhance learning experiences and bridge educational gaps, others express concerns about the technology (Adelana, Akinyemi, 2021; Ofosu-Ampong, 2023). For example, senior secondary school students in Nigeria indicated their preparedness to adopt AI-based tutoring systems for learning. In another study in Ghana, Ofosu-Ampong (2023) observed that 56 % of a total sample size of 50 tertiary students in Ghana knew AI-driven health platforms. Besides, Salifu et al. (2024) observed that factors like perceived trust, social influence, performance expectancy, hedonic motivation, and habits facilitated the attitudes toward the use of ChatGPT among economics students in Ghana.

3. Implications for Artificial Intelligence Use, Technostress, and Academic Productivity Studies in SSA

Notably, this editorial's implications focus on practical considerations for researchers within the SSA context. Researchers must consider factors driving AI use and its consequences, especially among students. For example, factors like academic performance and the psychosocial impact of AI use, like technostress, require further research attention in SSA (Salifu et al., 2024). Technostress among students is characterised by anxiety, fatigue, and frustration associated with the use of technology in their academic work (Upadhyaya, Vrinda, 2020; Wang et al., 2020). Although less is known in the context of SSA students, researchers should critically examine the linkages between AI use in education, technostress, and associated academic productivity.

As the call to advance AI use in SSA to promote the quality of education [Sustainable Development Goal 4], the contextual challenges and ethical issues should be a concern to researchers. Exploring these challenges in SSA will not only inform the quality of education but also help mitigate these negative factors. Besides, studies providing innovative and sustainable findings are required to enhance educational policies, teaching methods, digital infrastructure, and foster a supportive learning environment that prioritises student well-being and academic success.

4. Declarations

Ethics approval and consent to participate

Not applicable.

Consent for publication

Not applicable.

Availability of data and materials

Not applicable.

Conflict of interest statement

The author reports no conflicts of interest.

Funding
Not applicable.

5. Acknowledgements
I express my gratitude to the Centre for Behaviour and Wellness Advocacy, Ghana, for their editing support.

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