Language Education and Artificial Intelligence: An Exploration of Challenges Confronting Academics in Global South Universities

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ABSTRACT

While the global South universities have made significant strides in adopting digital technologies, there remain huge gaps, particularly when it comes to the acceptance of artificial intelligence (AI) in institutions of higher learning. As such, this study sought to explore global South academics' reported AI-related challenges in the language education domain from published literature. To achieve this, the researchers employed a literature review methodology which entailed meticulous searches for published literature using key words. The challenges reported in literature revealed four broad challenges namely limited language options, academic dishonesty, biases and lack of accountability, and laziness among students and lecturers. Based on these findings, the study recommended that there be an urgent prioritisation of the development of AI-based language education tools that are specifically tailored to the needs and contexts of learners in the global South. The study also recommended the development of accessible and affordable AI-based language education tools, that will promote the development of digital literacy skills among educators and learners in the global South.

KEYWORDS

Artificial intelligence (AI); assessment; global South; language; learning; teaching.

INTRODUCTION

While some African countries have made significant progress in adopting new digital technologies, there remain pertinent challenges that need to be addressed urgently if Africa is to reap the rewards promised by the fourth industrial revolution (4IR) (Ayanwale, 2023; Mkansi & Landman, 2021; Ostrowick, 2021). Studies conducted in this regard reveal that Africa remains the perennial weakling that continues to lag in the adoption of new technologies, scoring a paltry 3.3 out of 7, against a global average of 4.1 out of 7 in terms of technological readiness (Ayentimi & Burgess, 2019; Vashchenko et al., 2018). Nonetheless, there is a need to acknowledge the various systemic and endemic challenges that continue to stifle Africa's (and indeed other developing countries') adaptation to current trends in technological advancement (Kayembe & Nel, 2019; Mhlanga et al., 2021; Mkansi & Landman, 2021). Regrettably, the realities of globalisation have revealed that the problems of rapid technological advancement affect all contexts, more particularly the developing nations that are often reported to have a dearth of policies and resources that regulate use of these technologies (Lubinga et al., 2023; Ndung'u & Signé, 2020). In this study, 'global South' is used to refer to less industrially developed countries, generally located below the equator, and mainly in Africa, Latin America, and Asia, while 'global North' refers to the more developed countries that are in North America, Europe and Australia/New Zealand (Parnell, 2016). One such facet has been the adoption of artificial intelligence (AI) into learning systems.

AI is a computer science field that focuses on the development of non-human technologies that can perform tasks that have been traditionally known to require human intelligence such as decision-making, perception, and problem-solving (Mintz & Brodie, 2019; Zhang & Lu, 2021). Proponents of AI argue that using AI in language education offers numerous benefits that outweigh any potential or perceived costs. Firstly, some advocates contend that AI-powered language education tools can provide personalized learning paths, real-time feedback, gamification, and increased accessibility (Nazaretsky et al., 2022; Pokrivčáková, 2019; Ruan, et al., 2021). Since these tools can be used anywhere and anytime, they make language learning more accessible to learners who may not have access to traditional language classes (Chou et al., 2022; Fitria, 2021; Guilherme, 2019). Additionally, AI-powered language education tools can be less expensive than traditional language classes, saving students and educators lots of money (Pokrivčáková, 2019). In other contexts, AI has also been praised for saving time for educators by automating grading and assessment as became more evident during the COVID-19 pandemic (Başar & Şahin, 2021; Yang & Kyun, 2022). Finally, AI-powered language education tools provide data-driven insights into learners' progress and areas for improvement, optimizing the learning process for both teachers and learners (Kholis, 2021; Marais, 2021; Zou et al., 2023).

Unlike humans, AI systems are built to process large quantities of data, learn from patterns, and make predictions based on such data – this usually happens through techniques such as machine learning, natural language processing, and robotics (Guilherme, 2019; Holmes & Tuomi, 2022). AI has challenges, and this has led to technophobia among some academics.

Some of the principal concerns raised in some quarters include ethical and social concerns such as job displacements, biases, issues of privacy, and accountability among others (Berendt et al., 2020; Furey & Martin, 2019; Hamakali & Josua, 2023; Kim et al., 2022; Rudolph et al., 2023). While the benefits of AI in language education have been widely published globally, there are limited resources when it comes to how the global South is being negatively affected by the adoption of AI in education in general, and language education specifically. The purpose of this study was to investigate the difficulties that academics in the developing world encounter when incorporating artificial intelligence (AI) in language education.

METHODOLOGY

This study used the literature review methodology the framework, which involved analysing and synthesising existing peer-reviewed publications (Belur et al., 2021; Synder, 2019). To conduct this review, the researchers first defined the research question and set the scope of the study, as described by Templier and Paré (2015). The researchers investigated the challenges faced by academics in the global South in relation to the adoption and use AI in language education. According to Gough et al. (2017), the second step in a literature review is to identify identified relevant sources of information and collect data using appropriate search strategies. In this study, the researchers searched Google Scholar articles using the keywords (artificial intelligence, assessment, language, learning, teaching) and limited the search to the most recent 100 articles from global South contexts published between 2017 and 2023. Next, the researchers assessed the quality, relevance and reliability of the data collected, taking care to exclude publications from known predatory publishers. To uphold quality, the researchers only considered studies that were well-designed, used appropriate data collection and analysis methodologies, and had been conducted with high levels of rigour. Relevance was assessed in line with the studies' ability to address the specific objective of the present study. On the other hand, reliability was upheld by considering the consistency of the findings with other studies. The researchers ended up with 53 articles that were utilised in this study. As prescribed by Paré and Kitsiou (2017), the researchers began the analysis process by organising and summarising the data, identifying patterns and trends, and drawing conclusions from the findings. Table 1 below represents an overview of the distribution of some of the literature that was utilised in this study.

Table 1

A snapshot of the literature distribution

Theme	Articles	Setting of study
Language problems	Mackenzie (2022)	Colombia
	Phiri (2022)	Zimbabwe
	Tshabangu & Salawu (2022)	Africa
	Brandt & Lageman (2022)	Turkey
	Ngouo (2022)	Cameroon
	Zaugg et al. (2022)	Ethiopia & Eritrea
	Onyenankeya (2022)	Africa
	Sharma et al. (2022)	Developing countries
Academic integrity	Mutongoza (2021)	South Africa
	Surahman & Wang (2022)	Taiwan
	Mutongoza & Olawale (2022)	Botswana, South Africa & Zimbabwe
	Sharma et al. (2022)	Developing countries
	Mphahlele & McKenna	South Africa
	Afram et al (2022)	Ghana & Ivory Coast
	Ismail & Jabri (2023)	Indonesia
	Okolo et al. (2023)	Africa
	Ngouo (2022)	Cameroon
Bias and accountability	Gupta & Krishnan (2020)	India
	Lee et al. (2020)	Republic of Korea
	Choi (2022)	Republic of Korea
	Kholis (2021)	Indonesia
	Mphahlele & McKenna (2019)	South Africa
	Omari et al. (2022)	Ghana
	Tehzeeb & Raza (2022)	Pakistan
	Vashchenko et al. (2018)	Switzerland, Ukraine, South Africa
Laziness	Tehzeeb & Raza (2022)	Pakistan
	Yalçin-Incik & Incik (2022)	Turkey
	Omari et al., 2022	Ghana
	Wiratman & Rahmadani (2022)	Indonesia
		Turkey
	Yazici et al. (2023)	Indonesia
	Aziz & Silfiani (2020)	South Africa
	Lubinga et al (2023)	

RESULTS and DISCUSSION

The findings of this study revealed four broad categories of challenges faced by academics namely the limited language options in AI-powered systems, academic dishonesty, biases and lack of accountability, and issues of laziness. In the following subheadings, the study explores these challenges as presented in line with the literature.

Limited language options

Despite the positive advancements that were brought by the introduction of AI, many AI systems are developed primarily in English or other widely spoken languages to the detriment of the AI systems based on the languages spoken in the global South, (Mackenzie, 2022; Phiri, 2022; Tshabangu & Salawu, 2022). The lingua franca of business, academia, and technology are English, Chinese, Spanish, and French, and have a large user base and thus a larger market potential for AI developers (Brandt & Lagemann, 2022; Ngouo, 2022). The cumulative effect of this is that this prioritisation of the most-spoken languages makes it difficult for people in the Global South to access digital tools and services in their own language, which in turn impacts language education (Liang, et al., 2022; Zaugg et al., 2022). Language education in the global South has been reported to face multiple challenges related to resources, infrastructure, and funding, thus AI systems with limited language options can further exacerbate these challenges, making it harder for educators and students to access high-quality language learning materials (Onyenankeya, 2022; Taylor & Kochem, 2022). One must however note the advances that have been made concerning language options for the global South. Although slow-paced, there is growing recognition of the importance of developing AI systems for languages other than English, particularly for languages that are less widely spoken (Nemorin et al., 2023; Sharma et al., 2022). This is critical to ensure that students and lecturers benefit from the potential of AI technologies regardless of their languages being marginalised. The researchers recognise the various efforts being made to develop AI systems that can understand and generate text and speech in a variety of languages, and there has been progress in this area in recent years (Kim et al., 2022; Nemorin et al., 2023). Nonetheless, much more work needs to be done to ensure that AI systems are accessible and effective for speakers of all languages.

Academic dishonesty on steroids

Academics in the global South have argued that AI has led to the proliferation of automated cheating. With the rise of online learning and remote assessment practices, students have been known to use AI-powered tools to cheat in assignments and examinations (Mutongoza, 2021; Surahman & Wang, 2022). Students have been known to use AI-powered essay-writing tools that can generate essays that are indistinguishable from those written by humans, and some of these AI-powered tools have been known to fool plagiarism detectors by text-spinning tools that reword sentences to avoid detection (Cotton et al., 2023; Mutongoza & Olawale, 2022). Students have thus been known to complete high-quality assessments without putting any significant effort – in this regard, language lecturers sometimes witness work submissions that

contain errors from AI-software-generated tools (Rudolph et al., 2023; Sharma et al., 2022). Moreover, while these AI tools have improved significantly in recent years, they are not always accurate and can produce awkward or nonsensical translations (Afram et al., 2022). In these cases, language students in developing contexts sometimes use AI to cheat by using machine translation tools to translate their assignments from their native language to the target language (Klimova et al., 2023; Shiri, 2023; Straume & Anson, 2022). Unlike their counterparts in the developed contexts who can access AI-detection software, language academics in the global South have been known to lag in access owing to various reasons (Okolo et al., 2023). Many universities and research institutions in the global South have limited funding and resources, which can make it difficult to invest in expensive AI-detection technologies (Ismail & Jabri, 2023; Wylde et al., 2023). Equally instructional is the argument that AI technology is typically developed and trained using datasets in English, Mandarin, or other widely spoken languages (Ngouo, 2022; Zaugg et al., 2022). It is essential to emphasise that many African languages are not well-represented in AI datasets, and this has the potential to limit the accuracy and effectiveness of AI-detection software for African academics teaching indigenous languages (Mphahlele & McKenna, 2019; Mutongoza & Olawale, 2022).

Biases and lack of accountability

It is also argued that academics in the global South lament how AI biases significantly impact language education in various ways. These biases can occur through the training data used to develop AI-powered systems (Luengo-Oroz et al., 2021; Tehzeeb & Raza, 2022). While the researchers do not seek to make it appear as though there were no biases in language educators, we contemplate a principal concern raised by AI sceptics who argue that, unlike erstwhile human biases that were localised to limited geographical locations, the impact of AI biases spread more easily because of globalisation (Gupta & Krishnan, 2020; Kholis, 2021). According to Currie and Rohen (2022), this bias manifests as a result of a lack of diversity in teams that design and develop AI tools. We hasten to argue that because the global South continues to be underrepresented, indigenous languages spoken in these territories are not adequately represented. The result is usually that there is increased difficulty in recognizing or generating language patterns that are associated with non-standard varieties of a language or with non-native speakers (Gallacher et al., 2021; Lee et al., 2020; Vashchenko et al., 2022). This has grave repercussions when it comes to the use of AI systems for language proficiency assessments as this can lead to biases in evaluation, as certain systems may unfairly penalize students who use non-standard language varieties (Lawrence, 2023; Mphahlele & McKenna, 2019). Additionally, a lack of transparency and limited oversight can lead to unethical or inappropriate use of these technologies in language learning, which can negatively impact student learning outcomes (Omari et al., 2022; Silva et al., 2022; Winke & Isbell, 2017). As such, without accountability, there may be no recourse for educators or students if something goes wrong with these technologies, which can lead to dissatisfaction and frustration.

Classrooms on autopilot: Issues of laziness

While AI-powered technologies have many benefits, they have been blamed for leading to laziness among students and lecturers. It is argued that AI-powered technologies make tasks easier and eliminate the need for students and lecturers to put in the same level of effort they would have had to previously (Tehzeeb & Raza, 2022; Yalçin-Incik & Incik, 2022). Through their ability to do things such as automatically grading exams, there is a general sentiment that AI tools leave lecturers with less work to do in comparison to other traditional tools (Omari et al., 2022; Wiratman & Rahmadani, 2022). On the other hand, students have also been known to generate essays, making it easier for them to produce work without putting in much effort (Cotton et al., 2023; Yazici et al., 2023). In the same breath, students and lecturers who over-rely on AI tools sometimes become too dependent on AI-powered technologies and may find it challenging to do things manually (Lubinga et al., 2023; Rudolph et al., 2023). Over-reliance can lead to a lack of critical thinking and problem-solving skills, which are essential for academic success, and restricts students' and lecturers' development of important skills that are critical for educational development (Mikalef et al., 2022; Stoica, 2022). One must also note that while AI-powered technologies are designed to make tasks more efficient, they are not designed to be creative (Omari et al., 2022), thus, students and lecturers who rely solely on these tools may fail to develop their creativity, which is an essential aspect of learning (Sharma et al., 2022). Because AI technologies can only perform specific tasks that they are programmed to do, their scope is sometimes limited, and this can lead to a lack of diversity in the types of assignments and projects that students and lecturers undertake (Aziz & Silfiani, 2020; Gallacher et al., 2021). As such, those who overly rely on AI-powered tools may not explore different approaches to problem-solving or develop innovative ideas.

CONCLUSION: A Way Forward for Academics in the Global South

The researchers do not claim that this study is comprehensive and gives the full picture of the challenges faced by academics in the global South in relation to AI and language education, however, the study offers a glimpse into the current state of technology adoption in this domain. Although the use of AI in language education has the potential to revolutionize the way we learn and teach languages, its implementation in the global South faces unique challenges that must be addressed to ensure that its benefits are widely accessible. The researchers are convinced that there is an urgent need to prioritize the development of AI-based language education tools that are specifically tailored to the needs and contexts of learners in the global South. This must involve working with local experts and educators to identify the linguistic and cultural characteristics of learners in the developing world to design AI tools that take these factors into account. The researchers further advocate for accessible AI-based language education tools that are equitable and affordable. This may involve partnering with governments, non-governmental organisations, and private sector organizations to provide funding and resources to universities and students in underserved global South education communities. Additionally, it is vital to promote the development of digital literacy skills among educators and learners in the global

South. This can include providing training and support for teachers to effectively integrate AI-based language education tools into their teaching practices, as well as developing programs to help learners develop the skills needed to effectively use these tools. Finally, it will be important to continuously evaluate the effectiveness and impact of AI-based language education tools in the global South. To achieve this, stakeholders will need to be involved in conducting research and evaluations to assess their effectiveness in improving language learning outcomes, as well as identifying any potential risks or unintended consequences that may arise.

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