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A Conceptual Framework for the Ethical Integration of AI into ODeL in the Global South

Un cadre Conceptuel pour L'intégration Éthique de l'IA dans l'ODeL dans les pays du Sud

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Abstract

The study developed a model for understanding of ethical integration of AI in ODeL from the literature. The synthesis and literature reviews highlight concerns about academic integrity, the delivery of high-quality instruction, data privacy, accessibility, technological disparities, the absence of a legal framework, and the marginalisation of rural populations. Moreover, the lack of necessities like affordable healthcare, universal education, and infrastructure in most Global South nations exacerbates these challenges and hampers their ability to invest in technology. The present study makes a significant contribution to the existing literature by extending the literature on GAI and presents a conceptual framework for ethical integration in ODeL. Lastly, the paper offers practical implications for both researchers and practitioners in the field of GAI in ODeL.

Keywords: Artificial Intelligence; Open Distance Learning; Global South; Higher Education

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Résumé

L'étude a développé un modèle pour comprendre l'intégration éthique de l'IA dans l'ODeL à partir de la littérature. La synthèse et les revues de littérature mettent en évidence les préoccupations relatives à l'intégrité académique, à la prestation d'un enseignement de qualité, à la confidentialité des données, à l'accessibilité, aux disparités technologiques, à l'absence de cadre juridique et à la marginalisation des populations rurales. De plus, le manque de nécessités telles que des soins de santé abordables, une éducation universelle et des infrastructures dans la plupart des pays du Sud exacerbe ces défis et entrave leur capacité à investir dans la technologie. La présente étude apporte une contribution significative à la littérature existante en élargissant les recherches sur l'IA générative (GAI) et propose un cadre conceptuel pour une intégration éthique dans l'apprentissage ouvert et à distance (ODeL). Enfin, l'article offre des implications pratiques tant pour les chercheurs que pour les praticiens dans le domaine de l'IA générative en ODeL.

Mots-clés: Intelligence artificielle ; Enseignement à distance ouvert ; Sud ; Enseignement supérieur

Introduction

The emergence and development of Artificial Intelligence (AI) can be traced back to the Industry 3.0 Revolution and gained momentum during the Industry 4.0 Revolution, with major players like Google, Yahoo, YouTube, and mobile phones (Agolla, 2018; Yang et al., 2021). AI has significantly transformed education and impacted all stakeholders involved (Brunetti et al., 2020; Kong et al., 2021; Nguyen et al., 2023). With the rise of the Industry 4.0 Revolution in Germany in 2011 and the global spread of the Internet of Things (IoT), AI integration in education has revolutionised the delivery of education to learners (Akgun & Greenhow, 2022; Xu et al., 2021). Several studies have highlighted the indispensability of AI in people's lives and its impact on all areas of human activity, particularly in education (Akgun & Greenhow, 2022; Klimova et al., 2023; Krouska et al., 2020; Krouska et al., 2022; Meunier et al., 2022; Nguyen et al., 2023). AI has proven to enhance personalised learning and promote

student-centred approaches, such as exploratory learning, collaborative learning, automatic assessment systems, mobile game-based learning, and conversational chatbots for developing foreign language skills (Ahadi et al., 2023). Jobin et al. (2024) point out that Generative Artificial Intelligence (GAI) is a multifaceted technology that has the potential to improve human welfare, promote sustainable economic practices, increase productivity, innovation, and tackle important global issues.

Lim et al. (2023) conceptualised GAI as a technology that can (i) produce human-like content (like words or images) by using deep learning models and (ii), respond to a variety of complex prompts. It is used in many different sectors, such as banking, industry, transportation, healthcare, and security. The ability of computers to simulate intelligent behaviour and to emulate and enhance human behaviour is known as Artificial Intelligence (AI) (Akgun & Greenhow, 2021:431; Naqvi, 2020). The ability of a digital computer or computer-controlled robot to carry out actions typically associated with intelligent beings is another definition of Artificial Intelligence (AI) (Remian, 2019:4). Although the definition of Artificial Intelligence (AI) is not the main topic of this study, it does help to make sense of a concept that has caused scholarly disagreement and debate regarding its potential effects on educational systems. These definitions claim that AI can now do most tasks that people once performed, possibly rendering humans obsolete. Several studies (Akgun & Greenhow, 2022; Brunetti et al., 2020; Fernández-Batanero et al., 2023; Nguen et al., 2023; Turing, 1950) have demonstrated the advantages of implementing AI in education. However, for institutions to fully utilise the potential of technology without jeopardising future student outcomes, ethical concerns must be addressed through well-structured guidelines and policies (OECD, 2024; UNESCO, 20219). The rapid integration of GAI into Open Distance and eLearning (ODeL) has revolutionised the future of education (Akgun & Greenhow, 2022; Ayoko et al., 2024).

Studies have shown that AI is now an essential part of people's lives, impacting every aspect of human activity. GAI's collaborative assessment tools, automated processes, mobile game-based learning,

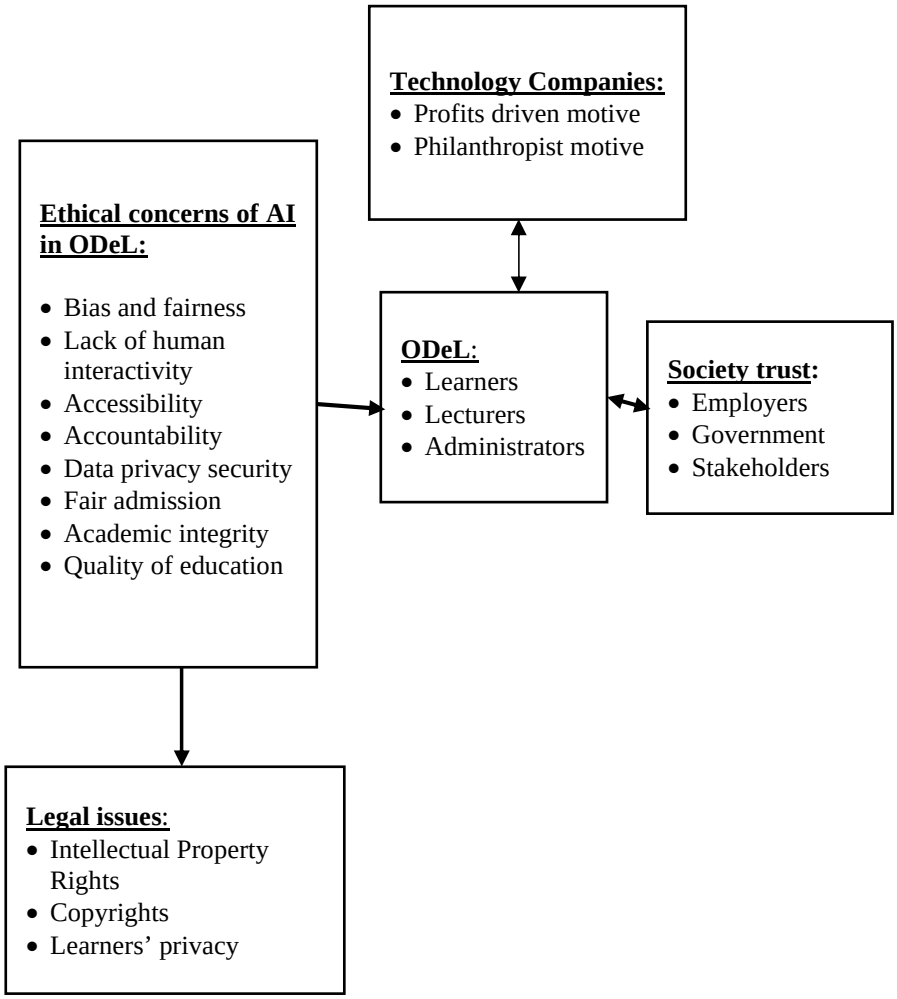
exploratory learning, and conversational chatbots for language acquisition have fundamentally transformed the way students in the Global South are taught through ODeL (Ayoko et al., 2024). As stated by Ahadi et al. (2023), GAI facilitates customised instruction, prioritising the unique needs of each student. The debate on the benefits of AI versus ethical issues raises several questions. One is left wondering how society can reap the benefits without facing these ethical challenges. In the context of the Global South, where there is still much work to be done in terms of ICT infrastructure and ethical guidelines for the seamless application of GAI in ODeL institutions, the implementation of AI may do more harm than good (Abbas et al., 2024; Bu, 2022; Peckham, 2021). Any integration of technologies in ODeL should ensure inclusivity, justice, and trust, for the benefit of society. Literature suggests that advanced countries (Global North) with well-developed ICT infrastructure and legal and ethical guidelines are better positioned to guide the implementation of GAI in education (Jobin et al., 2019).

Conceptual Framework

Following the preceding discussion, we propose a conceptual framework based on a critical literature review, as seen in Figure 1. The conceptual framework (Figure 1) includes the five subsystems of the ODeL holistic approach to ethical AI integration. These five components are: ethical considerations (independent variable), technological businesses (independent variable), legal framework (dependent variable), ODeL (dependent variable), and societal trust (dependent variable). Free AI created by technology organisations currently for free use are OpenAI for ChatGPT, Cohere for CohereAI, NotionAI for NotionAI, OpenAI for OpenAI, Anthropic PBC for Anthropic, and Adobe Inc. for AdobeAI, among others. As universities embrace AI, they should be mindful of the ethical implications for students' creative thinking, as 21st century skills will require them to interface with technologies more frequently than ever. Figure 1 explains the existing linkages between the ethics of integration of AI into ODeL in the Global South by identifying key participants and ethical challenges that must be overcome. For example, the arrow from technology companies is a double-barrel,

signifying AI adoption, while GAI developers gain from the fees charged, and the arrow pointing to legal issues stems from the use of GAI. With multiple technology companies developing diverse AI for educational purposes, there is a need for ethical AI integration in ODeL to avoid jeopardising society's trust (Figure 1).

Figure 1: Conceptual Framework of Ethical AI in ODeL



Source: Authors' illustration

When considering ethical regulations for GAI, it is crucial to move beyond the common practice of viewing the Global South as a whole and instead recognise its diversity and unique characteristics. Goffi (2023) argues that Africa, for instance, is a mosaic of cultures that cannot be neatly categorised or confined by established borders, with various wisdoms such as Ubuntu or animism, multiple religions and syncretism, diverse traditions, and identities shaped by different historical backgrounds. This perspective extends to the entire Global South. Incorporating geopolitical and political factors further complicates the establishment of a unified ethical framework (Onyejegbu, 2023). However, the approaches taken to address ethical issues in these regions significantly differ. Furthermore, the underrepresentation of regions such as Africa, South and Central America, and Central Asia suggests unequal participation in the AI ethics discourse, revealing a power disparity in the global conversation. Concerns about overlooking local knowledge, cultural pluralism, and the need for global fairness arise from the fact that more economically developed nations exert greater influence over this debate than others (Jobin et al., 2019:8).

The integration of GAI in ODeL involves teachers expecting students to be independent, autonomous, self-directed, self-sufficient, and highly motivated learners. Some students possess these characteristics, and academically strong students tend to thrive in the online environment. However, studies have found a high attrition rate in ODeL institutions, ranging between 40-80% (Serdyukov, 2021). This suggests that many students are unprepared for this type of learning. One possible explanation is that previous traditional education systems (Dynarski, 2018; Serdyukov, 2021) have not equipped students with effective learning skills, fundamental knowledge, and the right attitudes. It is, therefore, not surprising that online college students generally lack enthusiasm for independent learning (Serdyukov, 2021).

Ethical Concerns of AI in Education

The implementation of AI in education has not been without hurdles for educators and society. Several issues have been discovered in ODeL universities where students and lecturers have little contact.

Educators must solve these issues to gain societal trust. The study notes that the ethical issues and threats provided by AI systems appear to contradict marketing efforts that present algorithms to the public as objective and value-neutral tools (Akgun & Greenhow, 2021:434). According to various research (Akgun & Greenhow, 2021; Klimova et al., 2023; Nguyen et al., 2022; Peckham, 2021), as technologies imitate more and more human capabilities, society risks becoming reliant on them and, as a result, dumbing down our genuine humanity. Figure 1 and the following paragraphs illustrate some of the ethical issues that impact the seamless integration of AI in ODeL institutions.

Academic Integrity

AI-powered academic tools can be used to cheat, putting academic integrity at risk. The primary purpose of any education is to promote persons' overall development, which includes skill, virtue, and physical fitness growth (Bu, 2022). Human development is driven by free and spontaneous behaviours as people engage socially; yet, the employment of AI to give education may stifle free human development. While ODeL students are currently in separate locations from traditional students, the use of AI will further isolate them, as M2M takes on the function of instructor or lecturer (Serdyukov, 2021). This AI encourages self-directed learning, which could cause learners to lose their capacity for self-education and become stupid. Scholars (Chaudhry & Kazim, 2022; Tisseron, Tordo & Baddoura, 2015) who contend that young learners' use of AI tools also raises intriguing considerations regarding the illusions of empathy that students may build towards such instructional bots support this argument. Additionally, some features of AI tools that help students with data mining make it simpler for students to utilise this AI in an immoral way (Fisher et al., 2023). To tackle research issues in the realm of education, Educational Data Mining (EDM) involves the application of Knowledge Mining Techniques to analyse educational data (Fisher et al., 2023; Serdyukov, 2021). The EDM investigates ways to guide students' education. Its data comes from a variety of sources, such as trainee records, internet systems, databases from educational institutions, and so forth (Matzavela & Alepis, 2021). Artificial Intelligence (AI) seeks to enhance education and upgrade

learning support systems without jeopardising the process's integrity (Fisher et al., 2023). But the data shows that EDM is already being used unethically by both instructors and learners, which undermines the entire goal of the technology (Serdyukov, 2021).

Bias and Fairness

AI algorithms can inherit biases from training data, possibly perpetuating educational inequality (Wójcik, 2021). There is compelling evidence that facial recognition software incorrectly labelled many African Americans and Latino Americans as convicted felons (Murphy, 2019). There is overwhelming evidence that GAI systems have biases inherent in their machine learning modes, one of which is "gender" (Krutka et al., 2019; Miller et al., 2018). Researchers have found that when language learners attempted to use GAI to translate a gender-specific text using GAI Google Translate, they mistranslated the Turkish term for "he/she" as "nurse" and the Greek term for "he/she" as "doctor" (Ahadi et al., 2023; Johnson, 2021; Murphy, 2019). This is because the AI's human designers have preconceived notions of their own; these kinds of discrimination are ingrained in the systems.

Similarly, AI algorithms employed in admissions may unintentionally prejudice against specific groups, jeopardising fairness and diversity (Wójcik, 2021). Several studies (Akgun & Greenhow, 2022; Murphy, 2019) reveal that AI usage has resulted in discrimination against Latino and African Americans in comparison to the White population. The existing digital divide obviously widens after COVID-19, as nations (for example, the Global South) with inadequate infrastructure stymie their aspirations of thriving in digitalisation (Nguyen et al., 2023; Palomares et al., 2021). Furthermore, the fundamental lack of access to technologies, such as students from socially disadvantaged families not possessing personal digital devices (Nguyen et al., 2023; Sá et al., 2021), necessitates collaborative conversations with all educational stakeholders on AIED inclusion issues. Non-discriminatory GAI algorithms are another aspect of inclusivity. Quality education is essential for building a thriving society in which all students are treated equally, regardless of gender, race, religion, sexual orientation, or any other condition or circumstance (Nguyen et

al., 2023; Palomares et al., 2021). AIED design requires careful thought to avoid prejudice against specific groups, because AIEDs rely on and are only as good as their training data. As a result, AI developers must take steps to reduce scenarios in which the AIED demonstrates a specific bias and violates the nonmaleficence principle (Hogenhout, 2021; Nguyen et al., 2023).

Lack of Human Interaction

Overreliance on AI may limit the function of human educators, affecting social and emotional development. This leads to diminished authentic relationships, as people lose the ability to empathise, cognitive acuity as society relies on machines to make decisions, and, eventually, as with self-driving, we give up moral agency, a trait unique to humans (Bu, 2022; Nguyen et al., 2022; Peckham, 2021). Increased usage of GAI in ODeL is expected to limit students' interactions with one another, lecturers, and institution administrators, as well as their ability to foster individual resourcefulness, metacognition, self-regulation, and independent thought (Bu, 2022; Nguyen et al., 2023; Ouyang & Jiao, 2021). Similarly, several studies (Akgun & Greenhow, 2021; Klimova et al., 2023; Nguyen et al., 2023; Peckham, 2021) show that human-human interaction promotes humanity and feelings that machine-human interaction cannot. In an ODeL university where students are already lonely, interactions with machines may lead to increased exclusivity rather than inclusivity, resulting in frustrations (Ouyang & Jiao, 2021). Furthermore, GAI long-term machine-to-man (M2M) interactive learning is expected to have a negative impact on students' mental health, social skills, and development (Bu, 2022). Evidence reveals that the integration of AI in education is still a difficulty for most governments in the Global South. Although the West dominated early AI development, the Global South has a unique opportunity with this technology. These countries have challenges in the development and implementation of GAI, in terms of internet penetration, electricity availability, and concerns about the potential downsides (Okolo, 2023). In the future, governments in the Global South must fund regional scholars and include digital skills training in university courses. Furthermore, the countries that have dominated conversations around artificial

intelligence should include members from the Global South in roundtables and advisory committees (Okolo, 2023).

Accessibility

Not all learners have equal access to technology, resulting in gaps in educational opportunities (Wójcik, 2021). To achieve its primary goal, ODeL should provide equal access to those who are in need. In developing nations with an underdeveloped ICT infrastructure, the growing use of GAI in ODeL is anticipated to enhance exclusivity. In a MOOC study, Abhishek et al. (2023) discovered that students' access to AI-mediated education was hampered by a lack of financial resources. Furthermore, distance education is still delivered via antiquated technologies, some of which are ineffective and inefficient in the era of GAI. Several studies (Akgun & Greenhow, 2022; Ouma, 2019; Singh et al., 2021) have found evidence that a digital divide may hamper learning because learners lack access to the technology required to thrive in their academic pursuits. This digital divide may be true for the Global South, where most countries are still struggling with the full implementation of GAI due to poor ICT infrastructure, as well as the economy's level of electrification and communication network, including the use of computers, the internet, and learning. All these indicate whether it is morally acceptable to have a functional GAI in the Global South for the delivery of distance learning to achieve universal access to education, which is the main goal of ODeL.

Several researchers (Akgun & Greenhow, 2022; Kousa & Niem, 2022:6) believe that equal access to learning about and understanding AI, as well as the ability to pick ethically sustainable services and products, is difficult to achieve both nationally and internationally. Furthermore, creating similarly accessible and understandable AI apps for schools and businesses is difficult, if not impossible. AI applications are based on average learner data and do not detect cultural differences, specific needs, or distinct learning paths, although it is technically possible (Goffi, 2023; Okengwu, 2023; Onyejegbu, 2023). These raise ethical concerns when applying AI integration in education in the Global South versus the Global North (Goffi, 2023; Okengwu, 2023; Onyejegbu, 2023). Furthermore,

educational opportunities should be secured by providing various options, such as easily accessible, browser-based solutions, which is the core aim of ODeL, and failing to do so raises ethical questions about the use of GAI in education.

Accountability

Determining who is accountable for GAI-driven choices, such as grading or admissions, can be difficult. Several studies (Akgun & Greenhow, 2022; Bu, 2022) indicate that GAI is suitable for supporting instructors in grading assessments, hence delivering timely feedback to students while also reducing their workload. Despite some of these benefits, the use of GAI in remote education has been proven to present a problem to educators in terms of ownership of students' grades and admissions (Abbas et al., 2024; Wójcik, 2021). For example, Cushing and Osti (2023:23) state that "fitting AI in the day-to-day practice" may result in additional work duties for practitioners because GAI systems lack specific expertise and outputs must be "checked" by a human.

Data Privacy Security

The collection and analysis of student data raises privacy issues because it could be used illegally or without authorisation. Protection of students’ data from breaches and cyberattacks, and crimes is a major concern. Studies (Akgun & Greenhow, 2022; Demaidi, 2023; Peckham, 2021) have highlighted the risks associated with GAI applications in education regarding the student's Personal Information (PI), or data, which exposes them to dangers such as cyberattacks, crimes in institutions when such information falls into the hands of criminals such as scammers, bullies, sexual harassers, racists, and profiling, among others (Demaidi, 2023; Wójcik, 2021). The loss of students' personal information may not only expose them to risks, but it may also harm education providers' reputations for the quality of education they deliver to society (Peckham, 2021; Wójcik, 2021). For example, students' academic records could be the target of such cyberattacks. Protecting data access, on the other hand, is dependent on users, some of whom lack the necessary resources to offer fireproof protection to their GAI systems (Demaidi, 2023). These

risks call into question the ethics of applying GAI in the Global South, where AI infrastructures remain underdeveloped in comparison to the West or the Global North. Data reveals that the majority of the Global South continues to face regulatory systems that protect students' privacy and security. The lack of such a critical framework to guide the integration of GAI into education raises more questions than answers about not only the data security of students' personal information (PI), but also the integrity of education, as assessments can be manipulated, causing educational chaos.

For example, research in China discovered that there is no institutionalised, long-term assurance of the security of educational data, and associated regulatory mechanisms are inadequate; information breaches and illegal data exchanges are common (Bu, 2022). However, in the case of China, by August 2023, the Cyberspace Administration of China (CAC), along with six other Chinese regulators, jointly issued Interim Measures for the Management of Generative Artificial Intelligence Services, which went into effect on August 15th, 2023 (UNESCO, 2023). Similarly, the 2023 GPAI Summit was held in New Delhi on December 12-14, 2023, and featured lectures from GPAI experts on responsible AI, data governance, and the future of work, innovation, and commercialisation (UNESCO, 2023). The GPAI Summit cleared the way for the Ministry of Electronics and Information Technology to declare that platforms in India testing or teaching an AI tool must receive government approval before launching the product. "The use of under-testing/unreliable Artificial Intelligence model(s)/LLM/Generative/AI, software(s) or algorithm(s) and its availability to the users on Indian Internet must be done so with explicit permission of the Government of India," according to the press release (UNESCO, 2023).

Quality of Education

Generative AI (GenAI) is an Artificial Intelligence (AI) system that generates content based on natural-language conversational interface inputs. GenAI creates fresh material rather than simply curating old webpages (UNESCO, 2023). As a result, critics argue that relying too heavily on GAI for instruction may jeopardise educational quality and

professors' roles. Its employment by both students and teachers calls into question the trustworthiness of educational outcomes (Fisher et al., 2023). There is already concern that AI would remove students' and teachers' creative thinking by taking control of tough and complex activities with ease (Abbas et al., 2024). The goal of any educational system is to foster individuals' overall development; however, by incorporating GAI into ODeL education, students are immersed in AI engaging teaching approaches that can alleviate their cognitive load and make them believe that learning can also be relaxing and enjoyable, whereas ignoring effective learning requires a significant amount of cognitive input (Bu, 2022). However, another study (Ismail et al., 2019) discovered no indication that the online technique harmed the quality assurance of evaluation processes. While another study (Abbas et al., 2024) discovered that excessive use of AI, notably Generative Artificial Intelligence (GAI) such as ChatGPT, can lead to procrastination, memory loss, and poor academic performance among students. This adds to various other opposing viewpoints on the smooth incorporation of AI in ODeL. Perhaps these opposing viewpoints pave the way for future research into the good or detrimental consequences of generative GAI in education.

Job Displacement

There are concerns that GAI will replace certain administrative and support staff in higher education institutions. The integration of GAI tools in ODeL is seen to eliminate occupations, as they are partially or replaced by GAI or robots, unless the work is hazardous (Peckham, 2021). Several studies (Nguyen et al., 2021; Yang et al., 2021) show that the future job market will rely more on data analysis, and that to get a good job, future job seekers will need to have a wide range of technical skills and preparatory knowledge, particularly knowledge and concepts related to GAI. In ODeL, the student application process is GAI-enabled, and admissions can be done entirely without human intervention. The use of GAI in education has shown that most clerical or administrative duties can now be completed with precision, utilising GAI features such as Chatbots (Nguyen et al., 2021; Wang et al., 2021). For example, the admission officer's workload will be decreased because of this approach, and the rate of discrepancies and

false admission formation will be significantly reduced. People can simply create their own chatbots utilising the Rasa platform and tailor the chatbots' actions to their specific needs using our methodologies (Abbas et al., 2024; Wang et al., 2021). Based on the positive findings of this study, we may use technology to achieve new levels of efficiency, use valuable digital tools to broaden students' learning opportunities, and increase student support and participation. It can provide students with conveniently available materials, faster learning, and opportunities to apply what they have learned (Nguyen et al., 2021; Wang et al., 2021). Whereas proponents of GAI in education argue for its favourable effects, the long-term consequences of employment losses at the cost of multinational corporations and politicians who seek to benefit from them appear to be overlooked. This exaggerated the use of GAI in education, which should also reflect the human side, emotions and feelings that accompany job losses when computers take over human labour (Roschelle et al., 2020). Furthermore, the theory behind digital computers “is to perform any task that a human computer could perform. The human computer is not allowed to deviate in any way from the established rules; he is meant to be obeying them” (Turing, 1950:436).

Conclusion

The study identified several ethical concerns that are significant for the ethical integration of AI in ODeL in the Global South. The main ethical integration of AI ODeL in the Global South is technology companies, societal trust, legal issues, ethical concerns of AI, and ODeL. These ethical concerns present both opportunities and challenges that require concerted effort supported by legal policies to avoid negative implications on the learning outcomes. However, despite the ethical challenges highlighted in the vast literature, the analysis indicates that there are several potential benefits that permeate the integration of GAI in ODeL in the Global South that could be exploited to promote lifelong learning. The present study implies that the integration of AI in ODeL offers educators greater benefits in the Global South. Therefore, from a practical perspective, a well-designed GAI in ODeL reflects diversity and inclusiveness and is affordable for the Global South, which could offer educators better options to support students during their studies and help them achieve

their educational goals. While some GAI tools may create the illusion that what technologies generate is error-proof, thus defeating the very purpose of learning, such as analysis, creative thinking, evaluation, and critical review, it is important for ODeL practitioners to not blindly apply AI in ODeL without paying attention. Furthermore, both educators and researchers should be aware of the digital gap between the Global North and the Global South, which makes the integration of GAI in ODeL difficult, further creating disparity in education offered to marginalised communities, questionable.

The costs associated with GAI integration in ODeL should consider students' socio-cultural backgrounds, such as their level of economic capability, access to ICTs, and education. The integration of GAI-related tools in ODeL in developing countries (the majority of which are in the Global South) requires an understanding of human values to enable the development of GAI-related ethics and morality. Studies indicate that the rise of GAI makes it essential for human values to become embedded in or inseparable from the functions of the processes in which a GAI system learns to make evaluated choices in the safe fulfilment of human objectives and the values that guide their realisation. The integration of GAI-related tools in ODeL and their introduction to students is a commendable step in the Global South, where there is a significant gap in technology knowledge consumption. Academia, university administrators, and policymakers should be engaged with developments in AI ethics for education and society to empower students and researchers in the present and for future change (Figure 1). Figure 1 highlights the potential dangers that certain AI applications could have on society, leading to societal mistrust. Therefore, this study cautions researchers that the present study is based on a critical literature review, and therefore, future studies should consider conducting more empirical research to further develop and organise the literature in this emerging field.

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