

NAVIGATING

THE NEXUS ON SUSTAINABILITY, QUALITY, AND DECOLONIZED CURRICULA IN HIGHER EDUCATION

EXPLORANDO EL NEXO ENTRE SOSTENIBILIDAD, CALIDAD Y PLANES DE ESTUDIOS DECOLONIZADOS EN LA ENSEÑANZA SUPERIOR

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ABSTRACT

The discourse on sustainable curriculum practices in higher education has become integral to the ongoing exploration of decoloniality. This focus is particularly significant given the pivotal role that higher education institutions play in shaping knowledge production systems and nurturing discipline-specific expertise, all while contending with the persistence of colonial legacies. Additionally, the advent of the 4th Industrial Revolution (4IR), marked by the rise of artificial intelligence (AI), presents a multifaceted challenge to researchers within the higher education sector. This paper critically reflects on how researchers perceive and respond to the introduction of AI, examining its far-reaching implications for their professional responsibilities and the broader academic landscape. The research employs a critical participatory action research (CPAR) approach, utilising focus groups to generate fundamental insights, and is underpinned by a critical leadership study (CLS) framework. Thematic analysis reveals two overarching themes. Firstly, some researchers express a sense of helplessness, citing the absence of ethical frameworks within institutions to govern the use of AI. Secondly, concerns are raised about the result of AI on human cognitive abilities, suggesting a compromise of innate thinking capacities. The findings underscore the need for university capacity-building initiatives to develop practical strategies for the ethical application of AI. Recognising the potential of these strategies to promote sustainable curriculum practices and create inclusive learning environments, the paper advocates for comprehensive understanding and implementation. Such initiatives have the potential to enhance overall performance, fostering equitable and inclusive educational experiences for both students and universities alike.

Keywords: Sustainable curriculum practices, Curriculum decoloniality, Higher education institutions, Artificial intelligence, Ethical governance, Inclusive learning environments.

RESUMEN

El discurso sobre las prácticas curriculares sostenibles en la educación superior se ha convertido en parte integrante de la actual exploración de la descolonialidad. Este enfoque es particularmente significativo dado el papel fundamental que desempeñan las instituciones de educación superior en la configuración de los sistemas de producción de conocimiento y en el fomento de la experiencia específica de cada disciplina, al tiempo que luchan contra la persistencia de los legados coloniales. Además, el advenimiento de la Cuarta Revolución Industrial (4RI), marcada por el auge de la inteligencia artificial (IA), plantea un reto multifacético a los investigadores del sector de la enseñanza superior. Este

artículo reflexiona críticamente sobre cómo los investigadores perciben y responden a la introducción de la IA, examinando sus implicaciones de largo alcance para sus responsabilidades profesionales y el panorama académico en general. La investigación emplea un enfoque de investigación-acción participativa crítica (IAPC), utilizando grupos de discusión para generar ideas fundamentales, y se apoya en un marco de estudio de liderazgo crítico (ELC). El análisis temático revela dos temas generales. En primer lugar, algunos investigadores expresan una sensación de impotencia, aludiendo a la ausencia de marcos éticos en las instituciones que regulen el uso de la IA. En segundo lugar, preocupa el efecto de la IA en las capacidades cognitivas humanas, lo que sugiere un compromiso de las capacidades innatas de pensamiento. Los resultados subrayan la necesidad de iniciativas de capacitación universitaria para desarrollar estrategias prácticas para la aplicación ética de la IA. Reconociendo el potencial de estas estrategias para promover prácticas curriculares sostenibles y crear entornos de aprendizaje integradores, el documento aboga por una comprensión y aplicación exhaustivas. Tales iniciativas tienen el potencial de mejorar el rendimiento general, fomentando experiencias educativas equitativas e integradoras tanto para los estudiantes como para las universidades.

Palabras clave:

Prácticas curriculares sostenibles, Descolonialidad curricular, Instituciones de educación superior, Inteligencia artificial, Gobernanza ética, Entornos de aprendizaje inclusivos.

INTRODUCTION

The discourse on sustainable curriculum practices in higher education has become integral to the ongoing exploration of decoloniality (Tesfamichael & Enge 2024) as institutions of higher learning play a pivotal role in shaping knowledge production systems and nurturing discipline-specific expertise. Sliwka et al. (2024) believe that higher learning institutions must also grapple with the persistence of colonial legacies that permeate educational structures and content. In recent years, the advent of the 4th Industrial Revolution (4IR), characterised by the rise of artificial intelligence (AI) and other advanced technologies, presents a multifaceted challenge to researchers and educators within the higher education sector. This paper critically reflects on how researchers perceive and respond to the introduction of AI, examining its far-reaching influence on scholarly and professional responsibilities in the broader academic landscape. Thus, the aim is to understand how curriculum reformists in higher

education perceive and respond to the integration of AI. To make sense of the trends in the developments based on the question, we decided to look at one country in the first world, another in the continent of Africa, the region and South Africa where the study is conducted. A preliminary literature review based on Russia, Cape Verde, Botswana, and South Africa is provided to provide a more precise picture. In Russia, curriculum reformist higher education institutions increasingly integrate AI into their curricula, focusing on technical skills and innovation. The Russian government fully supports the integration of AI. For instance, national AI strategies and funding reflect significant government support for AI research and development. However, discussions on ethical frameworks are emerging, though they are not as advanced as in some Western countries (George, 2024).

On the other hand, Cape Verdean higher education shows growing interest in AI, though infrastructural and financial limitations slow widespread adoption. The country relies heavily on international partnerships for AI expertise and resources. Ethical concerns are present but not deeply embedded in national policy discussions. In Botswana, curriculum reformists and policymakers are developing frameworks for integrating AI into higher education, emphasising capacity building and skills development. There are government initiatives to promote STEM education, with AI being a key component. However, ethical considerations are gaining traction, especially regarding data privacy and AI's influence on employment (Mooko, 2022).

Regarding South Africa, universities are at the forefront of AI integration in higher education in Africa, with several institutions offering specialised AI programs. There is active development of national AI policies and ethical guidelines. There is a strong emphasis on ethical frameworks and decolonial perspectives, ensuring AI reduces rather than exacerbates inequalities (Coetzee et al., 2021).

Despite the progress made in these countries, substantial resources are needed; for instance, Russia and South Africa have more resources and governmental support for AI integration (Cyman et al., 2021). Cape Verde and Botswana face more significant resource constraints, relying on international collaborations. Russia and South Africa are at more advanced stages of AI integration in curricula. Cape Verde and Botswana have some constraints as part of the global south (Mutuku, 2020). There is a strong emphasis on ethical considerations and decoloniality in South Africa. Ethical discussions are present in Russia, Cape Verde, and Botswana but are less developed or prioritised differently. Russia has a centralised and fortified AI strategic policy (Cyman et al., 2021). However,

Botswana and Cape Verde are still developing policies, with AI integration being a newer focus area. In Russia, the focus is on technological innovation and national competitiveness. In South Africa, the focus is on equity, inclusion, and ethical use of AI. All countries recognise the critical importance of integrating AI into higher education to stay competitive in the global economy. There is an emphasis on developing local expertise and capacity in AI through education and training programs. International partnerships are common to enhance AI research and curriculum development. There is active or emerging development of national policies to guide AI integration in higher education. Acknowledgement of the need for ethical considerations, though the depth and focus of these discussions vary.

Literature shows that integrating AI into the higher education curriculum in Russia is seen as a strategic move to align with global technological advancements and economic competitiveness (Knox, 2022).

Russian universities have begun incorporating AI courses and research initiatives to foster innovation and technical skills among students. However, there is also a critical dialogue around ensuring these technological advancements do not exacerbate existing inequalities or reinforce the remnants of a centralised, top-down educational model inherited from the Soviet era (Kinossian & Morgan, 2023). Cape Verde, a small island nation with limited resources, views the integration of AI in higher education as an opportunity to leapfrog traditional developmental challenges. Ferreira et al. (2021) reported that efforts are being made to introduce AI-driven learning tools to address educational disparities and provide personalised learning experiences. The decolonial aspect here is crucial, as Cape Verde seeks to implement these technologies in a way that respects and incorporates indigenous knowledge systems and local cultural contexts. Botswana is taking strides to incorporate AI in its higher education curriculum to bolster its educational and economic landscapes. The government and educational institutions are collaborating to develop AI curricula to enhance learning outcomes and research capabilities. There is a strong emphasis on ensuring that these initiatives are inclusive and equitable, addressing the rural-urban divide and supporting the educational aspirations of historically marginalised communities. The decolonial narrative in Botswana focuses on integrating AI while preserving its diverse population's unique cultural heritage and knowledge systems (Mooko, 2022). In South Africa, the conversation around AI and higher education is deeply intertwined with the country's efforts to dismantle apartheid legacies and promote social justice. Coetzee et al. (2021) believe South

African universities are at the forefront of incorporating AI technologies in teaching and research to enhance educational access and quality. However, there is a critical need to ensure that AI implementations do not replicate or exacerbate existing social inequalities. The decolonial approach in South Africa emphasises the importance of creating an inclusive AI-driven educational framework that reflects the nation's diverse cultural and linguistic (Xing et al., 2018). By examining these diverse perspectives, this paper aims to provide a comprehensive understanding of how curriculum reformists in higher education perceive and respond to the integration of AI and how these perceptions are shaped by their respective countries' historical, cultural, and socio-economic contexts.

The study addresses several interrelated problems stemming from integrating AI in higher education, focusing on sustainable curriculum practices and decoloniality (Oliveira, 2024). Higher education institutions continue to grapple with colonial legacies that influence their knowledge production systems and discipline-specific expertise. Jackson (2023) found that these legacies often marginalise non-Western perspectives and perpetuate inequalities. Kooli (2023) argues that the advent of AI presents ethical dilemmas for researchers and educators. The research of Mbhiza (2023) highlights insufficient ethical frameworks within institutions to govern the use of AI. This absence can lead to issues such as data privacy violations, bias in AI algorithms, and inequitable access to AI technologies (Kooli, 2023). There are concerns about the impact of AI on human cognitive abilities, with some researchers feeling that AI may compromise innate thinking capacities (Dagan, 2024). This issue is crucial as it relates to the broader question of how AI will affect human intelligence and learning processes. Dagan (2024) expresses a sense of helplessness in the face of rapid AI advancements, exacerbated by the lack of institutional support and clear ethical guidelines. This sentiment can hinder their ability to engage with and integrate AI into their work effectively. There is a need for capacity-building initiatives within universities to develop practical strategies for the ethical application of AI. Such initiatives are essential to empower researchers and educators to navigate the complexities of AI integration (Gignac & Szodorai, 2024). Prem (2023) believes that Institutions lack comprehensive ethical frameworks to guide the use of AI, leading to uncertainty and potential misuse. AI's influence on human cognition is a significant concern, potentially negatively affecting critical thinking and problem-solving skills. The uneven distribution of AI resources and knowledge can exacerbate existing educational inequalities, particularly in regions still grappling with colonial impacts. Researchers feel unsupported by their institutions, lacking the necessary

resources, training, and ethical guidelines to effectively integrate AI into their work (Huriye, 2023). The ongoing influence of colonial legacies in curricula necessitates a shift towards decolonial practices that embrace diverse perspectives and equitable knowledge production.

Theoretical Framework

This study is grounded in a critical leadership study (CLS) framework; the researchers employ CLS because it is essential for this research as it provides a framework for understanding and addressing the complex ethical, social, and structural challenges associated with integrating AI into higher education (Bolden, 2024). By applying this theory, the researchers achieved the objective of promoting sustainable curriculum practices, fostering inclusive learning environments, and ensuring ethical AI adoption. The insights gained from critical leadership theory enabled the development of practical strategies that empower stakeholders and drive meaningful change in higher education institutions.

Lessons Learned from the Research

Successful AI integration requires balancing technical skills development and ethical considerations (Ayinla et al., 2024). Political will and governments need to invest significantly in higher education to ensure effective AI integration. Investment initiatives are pivotal in securing international expertise, which can accelerate the development and implementation of AI curricula. Huriye (2023) is of the view that there is a need for establishing realistic ethical frameworks is crucial to addressing concerns about AI's impact on society and cognitive abilities. AI initiatives ought to be inclusive, ensuring that they address and reduce existing educational and social inequalities. Integrating AI into higher education curricula should be approached with a system-thinking mindset, considering the complex interplay of technical, ethical, and social factors indicate that the AI curriculum can significantly enhance students' problem-solving skills and innovation capabilities. However, it is equally important to mitigate potential negative impacts, such as exacerbating digital divides and ethical dilemmas (George, 2024). Thus, a multidisciplinary approach that incorporates insights from computer science, education, ethics, and social sciences is essential for developing AI curricula that are both effective and responsible.

Integrating AI in higher education across Russia, Cape Verde, Botswana, and South Africa showcases diverse approaches shaped by each country's resources, policies, and priorities. Despite these differences, common themes such as the importance of capacity building, ethical considerations, and international collaboration

emerge. Learning from these varied experiences allows other nations to develop more effective and equitable AI education strategies.

From the above literature reviewed, there are some findings to which to relate. Firstly, some researchers express a sense of helplessness, citing the absence of ethical frameworks within institutions to govern the use of AI. Secondly, concerns are raised about the impact of AI on human cognitive abilities, suggesting a compromise of innate thinking capacities. The findings underscore the need for university capacity-building initiatives to develop effective strategies for the ethical application of AI. Recognising the potential of these strategies to promote sustainable curriculum practices and create inclusive learning environments, the paper advocates for comprehensive understanding and implementation. Such initiatives have the potential to enhance overall performance, fostering equitable and inclusive educational experiences for both students and universities alike.

Decoloniality and Sustainable Curriculum Practices

Decoloniality is a framework that seeks to understand and address the lasting impacts of colonialism on contemporary societies, particularly in the domain of knowledge production and education (Gu, 2020). In higher education, decoloniality involves questioning and dismantling the Eurocentric biases and power structures that have historically dominated academic institutions. This process is critical for creating more inclusive and equitable educational environments that reflect all students' diverse realities and perspectives.

Sustainable curriculum practices are integral to the decoloniality discourse because they involve rethinking and redesigning educational content and pedagogy to be more inclusive, equitable, and responsive to the needs of all students (Gu, 2020). These practices aim to move beyond the traditional, often exclusionary, education models to create culturally relevant, socially just, and environmentally sustainable curricula. By incorporating diverse perspectives and knowledge systems, sustainable curriculum practices can help to decolonise education and promote a more inclusive and equitable academic environment.

The Role of Higher Education in Shaping Knowledge Production

Higher education institutions are key players in producing and disseminating knowledge. They can shape how knowledge is created, shared, and utilised, influencing broader societal norms and values. As such, these institutions are responsible for ensuring that their practices are

equitable, inclusive, and reflective of the diverse realities of their students.

The persistence of colonial legacies in higher education poses a significant challenge to this goal. These legacies manifest in various ways, including the dominance of Western epistemologies, the marginalisation of non-Western knowledge systems, and the perpetuation of power imbalances within academic institutions (Mbiza, 2023). Addressing these issues requires critically examining existing practices and a commitment to decolonising the curriculum.

The 4th Industrial Revolution and Its Impact on Higher Education

The 4IR, characterised by rapid technological advancements, particularly AI, presents opportunities and challenges for higher education (Abulibdeh et al., 2024). On the one hand, AI has the potential to revolutionise education by providing personalised learning experiences, improving administrative efficiency, and enabling innovative research methods. On the other hand, the integration of AI into higher education raises significant ethical and practical concerns.

Al-Maskari et al. (2022) reported that higher education scholars grapple with AI's implications for their professional responsibilities and the broader academic landscape. These implications include the potential for AI to exacerbate existing inequalities, the need for ethical frameworks to govern the use of AI, and concerns about the impact of AI on human cognitive abilities.

MATERIALS AND METHODS

This study employs a critical participatory action research (CPAR) approach to explore how researchers perceive and respond to the introduction of AI in higher education. CPAR is a collaborative and reflective research method that involves participants in the research process, aiming to generate actionable insights and promote social change. Focus groups were conducted with researchers from various disciplines within higher education to gather their perspectives on integrating AI. Thematic analysis was used to identify and analyse key themes from the focus group discussions. CPAR is a methodological approach that combines participatory action research with a critical perspective, emphasising collaboration, reflection, and action among researchers and participants to address complex social issues. In this context, CPAR was adopted to generate data for a research study focused on educational experiences and professional development across different academic levels, utilising focus groups

and Microsoft Teams (MST) as the primary instruments for data collection.

CPAR is rooted in the principles of participation, collaboration, and reflexivity. It involves stakeholders as co-researchers who actively participate in the research process to generate actionable knowledge. This approach is particularly suitable for educational research, where participants' experiences and insights are crucial for understanding and addressing systemic issues. The use of CPAR in this study aligns with its goals of empowering participants, fostering critical reflection, and promoting transformative action.

Data Generation Process

The research process began with a plenary session facilitated via MST, allowing synchronous online engagement. The session included the following components: Team Building Exercise (60 minutes); this activity aimed to create a sense of community and trust among participants, essential for fostering open and honest dialogue. The exercise facilitated interpersonal connections and set the tone for collaborative engagement throughout the research process. SWOT Analysis (60 minutes): Participants conducted a SWOT analysis to identify the strengths, weaknesses, opportunities, and threats related to their educational and professional contexts. This structured reflection enabled the collection of rich qualitative data, highlighting participants' diverse perspectives and experiences. The SWOT analysis served as a critical reflection tool, aligning with the CPAR's emphasis on understanding and addressing systemic issues. One month after the initial plenary session, participants were divided into four specific action groups to generate more focused and rich data. These groups included supervisory staff, Master's education students, PhD education students, and postdoctoral researchers. Each group was tasked with discussing their specific experiences and challenges, providing deeper insights into their unique contexts.

Group Discussions (20 minutes per group): Each group engaged in focused discussions, facilitated via MST, to explore their specific issues in depth. The segmentation of participants into groups allowed for more targeted and relevant data collection, ensuring that the nuances of each academic level were captured. Plenary Reporting (10 minutes per group): Following the group discussions, each group presented their findings in a plenary session, enabling cross-group sharing of insights and fostering a broader understanding of the issues. This reporting session facilitated data synthesis across academic levels and promoted collective reflection.

Data Collection Instrument: Microsoft Teams

MST served as the primary instrument for data collection, offering several advantages. MST provided a user-friendly platform for participants to engage in synchronous discussions, regardless of their geographical location. This accessibility was crucial for including a diverse range of participants. MST's recording feature enabled the capture of detailed discussions, which were subsequently transcribed for analysis; this ensured the accuracy and completeness of the data collected. The platform's features, such as breakout rooms and screen sharing, facilitated structured and interactive sessions, enhancing the data quality.

Debriefing and Reflection

The entire process culminated in a debriefing session lasting 60 minutes, which included the formation of action groups and reflection on the discussions. This session allowed participants to consolidate their insights and discuss potential actions based on the findings. The debriefing aligned with the CPAR principle of reflexivity, encouraging participants to critically evaluate the data and consider its implications for practice and policy. The use of CPAR in this study, facilitated by MST, effectively generated rich and actionable data through a structured and collaborative process. The combination of plenary sessions, focus groups, and reflective debriefing ensured that the diverse experiences of participants were thoroughly explored and integrated into the research findings. This approach empowered participants as co-researchers and contributed to generating knowledge that is both contextually relevant and transformative.

RESULTS AND DISCUSSION

This study employed thematic analysis to analyse the qualitative data generated from the focus groups and plenary sessions conducted via MST. The first step in thematic analysis was familiarisation with data, and all focus group discussions and plenary sessions were recorded and transcribed verbatim. Co-researchers immersed themselves in the data by repeatedly reading the transcripts to understand the content and context comprehensively and then systematically coded the data, identifying segments that were relevant to the research questions. Coding was performed using qualitative data analysis software to efficiently manage and organise the data. Then, each data segment was assigned a code that succinctly described its content. Fourthly, we searched for themes; codes were collated into potential themes based on patterns observed across the data. The relationships between codes were examined to identify broader themes that captured significant aspects of the participants' experiences and perspectives. Thereafter, themes were reviewed and refined

to ensure they accurately represented the data. This process involved checking if the themes worked concerning the coded extracts and the entire data set. Themes were adjusted, combined, or discarded based on relevance and coherence, followed by defining and naming themes; clear definitions and names were assigned to each theme, capturing the essence of each theme. Sub-themes were identified to provide a nuanced understanding of the main themes. Finally, writing the report, the final themes were organised into a coherent narrative that addressed the research questions. Direct quotes from participants were used to illustrate each theme and provide evidence for the analysis.

Two overarching themes emerged from the thematic analysis.

1. Sense of Helplessness Among Researchers Due to the Absence of Ethical Frameworks for AI Use

Lack of institutional guidance: Co-researchers expressed frustration over the absence of clear ethical guidelines and policies within their institutions to govern the use of AI in research and education.

Ethical dilemmas: Co-researchers faced ethical dilemmas and uncertainties regarding the appropriate use of AI, highlighting the need for comprehensive frameworks to guide ethical decision-making.

Need for support: There was a strong call for institutional support in the form of training and resources to help researchers navigate AI's ethical challenges.

Concerns About the Influence of AI on Human Cognitive Abilities

Dependence on AI: Co-researchers were concerned about the growing reliance on AI technologies and the potential decline in human cognitive skills.

Skill degradation: The discussion highlighted fears that over-reliance on AI could decrease critical thinking, problem-solving, and other cognitive abilities essential for academic and professional growth.

Balancing AI and human skills: There was a consensus on the need to find a balance between leveraging AI for efficiency and maintaining the development of human cognitive skills.

Thematic analysis in this study provided a structured approach to analysing qualitative data, revealing deep insights into the experiences and concerns of the participants. The themes of helplessness due to the lack of ethical frameworks and concerns about the impact of AI on cognitive abilities highlight critical areas for institutional focus and policy development. These findings underscore

the importance of ethical considerations and the need for balanced integration of AI in educational and research contexts.

The thematic analysis of focus group discussions, analysed through the lens of CLS, revealed two overarching themes: the sense of helplessness among researchers due to the absence of ethical frameworks within institutions to govern the use of AI, and concerns about the impact of AI on human cognitive abilities.

2. Helplessness and Ethical Frameworks

Many researchers expressed a sense of helplessness regarding integrating AI into higher education. They highlighted the lack of institutional ethical frameworks to guide the use of AI, which creates uncertainty and anxiety about the potential consequences of AI deployment. This absence of clear guidelines and regulations makes it difficult for researchers to navigate the ethical complexities of AI and ensure that their work adheres to ethical standards.

Extract 1: Lack of Institutional Guidance

Participant A (Supervisory Staff): *"We are constantly innovating with AI tools, but there's no clear guidance from our institution on what's ethical or not. It feels like we're navigating a grey area with no support."*

Participant B (PhD Education Student): *"I often worry about whether the AI applications I use for my research might have unintended consequences. Without an ethical framework, it's hard to be confident in my choices."*

CLS emphasise the role of leaders in establishing ethical standards and providing direction. The absence of institutional guidance reflects a leadership gap, where leaders fail to establish clear ethical frameworks. This lack of leadership leaves researchers feeling unsupported and uncertain about their ethical responsibilities.

Extract 2: Ethical Dilemmas

Participant C (Master's Education Student): *"We're encouraged to use AI to enhance our research, but sometimes I question if we're sacrificing too much in terms of ethical considerations. The pressure to produce results can overshadow these concerns."*

Participant D (Postdoctoral Researcher): *"I've seen peers manipulate AI tools in ways that are ethically dubious, just to meet publication requirements. It's troubling because there's no clear stance from our leaders on what's acceptable."*

This extract highlights the critical need for ethical leadership from a CLS perspective. Leaders should provide clear guidelines and foster an environment prioritising ethical

considerations over mere output. The current scenario suggests a failure to promote ethical reflexivity and accountability among researchers.

Extract 3: Need for Support

Participant E (Supervisory Staff): *"We need more than just vague guidelines. Training sessions and resources on ethical AI use would be immensely helpful. It's frustrating to see leaders not addressing this gap."*

Participant F (PhD Education Student): *"There's a sense of helplessness because even when we want to do the right thing, we lack the knowledge and support to make informed decisions."*

CLS underscores the importance of transformative leadership that empowers and equips followers with the necessary skills and knowledge. The call for training and resources indicates a demand for leadership that not only sets ethical standards but also actively supports researchers in adhering to them.

The lack of ethical frameworks also raises concerns about accountability and transparency. Without clear guidelines, it is challenging to hold institutions and individuals accountable for the ethical use of AI. This gap underscores the need for higher education institutions to develop and implement comprehensive ethical frameworks that address the unique challenges posed by AI.

Influence on Human Cognitive Abilities

Co-researchers also raised concerns about the influence of AI on human cognitive abilities. There is a fear that the increasing reliance on AI could compromise innate human thinking capacities, leading to a decline in critical thinking and problem-solving skills. This concern is particularly relevant in the context of education, where the development of cognitive abilities is a central goal.

Extract 4: Dependence on AI

Participant G (Master's Education Student): *"We're becoming overly dependent on AI tools. I fear that my analytical skills are deteriorating because I rely too much on these technologies."*

Participant H (Postdoctoral Researcher): *"AI can do so much, but there's a real risk of us losing our edge in critical thinking and problem-solving. It's like we're outsourcing our brains."*

From the perspective of CLS, this dependence indicates a need for leadership that critically evaluates and moderates technology integration. Leaders should encourage a balanced approach, where AI is used as a tool to enhance

human capabilities rather than replace them, ensuring that critical cognitive skills are maintained and developed.

Extract 5: Skill Degradation

Participant I (PhD Education Student): *"I've noticed that my peers and I are less inclined to solve problems ourselves because we know there's an AI solution available. It's concerning how quickly we defer to technology."*

Participant J (Supervisory Staff): *"There's a noticeable decline in creativity and independent thinking among students. They're excellent at using AI tools but struggle with tasks that require deep thinking."*

CLS advocates for leadership that promotes continuous learning and development of human skills. The reported decline in creativity and independent thinking calls for leaders to implement strategies that encourage intellectual growth alongside technological use. Leaders should create environments that challenge researchers to use AI as a complement to, rather than a substitute for, their cognitive efforts.

Extract 6: Balancing AI and Human Skills

Participant K (Master's Education Student): *"We need to strike a balance. AI should be a tool to enhance our work, not a crutch. Leaders should guide us in finding this equilibrium."*

Participant L (Postdoctoral Researcher): *"It's essential that our leaders understand the implications of AI and help us integrate it in ways that preserve and enhance our cognitive abilities."*

CLS highlights the role of leaders in fostering environments that balance innovation with tradition. Leaders should guide the integration of AI in a way that maximises its benefits while preserving essential human skills. This balanced approach is crucial for sustainable professional and academic growth. Integrating AI in education can potentially change the nature of learning and cognitive development. While AI can enhance learning by providing personalised and adaptive learning experiences, ensuring that it does not undermine the development of essential cognitive skills is crucial. This requires a balanced approach that leverages AI's benefits while fostering the development of human cognitive abilities.

Recommendations for Capacity-Building Initiatives

The findings of this study highlight the need for capacity-building initiatives within universities to develop effective strategies for the ethical application of AI. These initiatives should focus on:

Developing Ethical Frameworks: Universities should prioritise the development of comprehensive ethical frameworks to guide the use of AI. These frameworks should address key ethical issues, including transparency, accountability, and the potential impact on human cognitive abilities.

Promoting Ethical Awareness: Capacity-building initiatives should include training and education programs to raise awareness about the ethical implications of AI. These programs should equip researchers and educators with the knowledge and skills needed to navigate the ethical complexities associated with AI.

Fostering Critical Thinking: Universities should emphasise the importance of critical thinking and problem-solving skills in the context of AI; this can be achieved by integrating these skills into the curriculum and providing opportunities for students to engage in critical reflection and analysis.

Encouraging Collaboration: Capacity-building initiatives should promote collaboration among researchers, educators, and other stakeholders to develop and implement ethical strategies for using AI. This collaborative approach can help to ensure that diverse perspectives are considered and that ethical practices are aligned with the needs and values of the academic community.

Promoting Sustainable Curriculum Practices

The ethical application of AI has the potential to promote sustainable curriculum practices and create inclusive learning environments. By addressing the ethical challenges associated with AI, universities can develop curricula that are more equitable, inclusive, and responsive to the needs of all students. In turn, this can enhance overall performance and foster equitable and inclusive educational experiences. Sustainable curriculum practices involve integrating diverse perspectives and knowledge systems into the curriculum, promoting social justice and environmental sustainability, and ensuring that educational practices align with all students' needs and values. The ethical application of AI can support these goals by providing personalised and adaptive learning experiences, improving access to education, and enhancing the overall quality of education.

CONCLUSION

The discourse on sustainable curriculum practices in higher education is closely linked to the ongoing exploration of decoloniality and the challenges posed by the 4IR. This study has critically reflected on how researchers perceive and respond to the introduction of AI, highlighting the need for capacity-building initiatives to develop effective

strategies for the ethical application of AI. The findings underscore the importance of developing comprehensive ethical frameworks, promoting ethical awareness, fostering critical thinking, and encouraging stakeholder collaboration. By addressing the ethical challenges associated with AI, universities can promote sustainable curriculum practices and create inclusive learning environments that enhance overall performance and foster equitable and inclusive educational experiences. As higher education institutions continue to navigate the complexities of decoloniality and the 4IR, it is crucial to prioritise AI's ethical application and develop strategies that promote social justice, equity, and inclusion. These efforts can potentially transform higher education, creating a more inclusive and equitable academic environment that reflects all students' diverse realities and perspectives.

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