Theme: **Changing mindsets for inclusive open education**

Topic: Exploring NAMCOL Academic Staff Perspectives on the Integration of AI in Teaching and Learning

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Abstract

The rapid advancement of Artificial Intelligence (AI) is reshaping various sectors, including education, through innovations such as personalised learning, automated assessment, and data-informed decision-making. This study investigates the perspectives of academic staff at the Namibian College of Open Learning (NAMCOL) on the integration of AI in teaching and learning. Adopting a qualitative research approach, the study employed an online questionnaire comprising open-ended questions to gather data. The target population consisted of academic staff who had attended a prior AI integration workshop facilitated by the Commonwealth of Learning, ensuring all respondents had pre-existing exposure to AI tools and concepts. From a total of 26 eligible participants, 16 were purposively selected based on their involvement in the workshop and perceived foundational knowledge of AI. Responses were analysed thematically using a deductive coding framework, structured around the study's research objectives.

Findings reveal a generally positive outlook on AI's potential to enhance teaching effectiveness, learner engagement, and institutional efficiency. However, participants also identified several challenges, including limited infrastructure, lack of structured training, institutional resistance to change, and ethical concerns such as data privacy and equitable access.

The study recommends comprehensive training initiatives, stakeholder involvement, clear policy development, and pilot projects to guide AI adoption at NAMCOL. These steps are essential to building staff capacity and ensuring the responsible, inclusive, and effective integration of AI into teaching and learning environments.

Keywords: AI integration, teaching and learning, academic staff, qualitative research, NAMCOL, open and distance learning

1. Introduction

Artificial Intelligence (AI) technologies offer innovative approaches to enhance teaching and learning, such as personalised learning experiences, automated assessment tools, and data-driven decision-making. Educational institutions globally are actively exploring ways to harness AI's potential to improve student outcomes and streamline academic operations (Anderson & Wilson, 2024). However, the successful integration of AI in education requires more than technological infrastructure. It depends critically on the attitudes, readiness, and capabilities of academic staff, who are central to its effective implementation. Emerging evidence suggests that while AI can significantly enhance learning efficiency and support differentiated instruction, its adoption often faces barriers such as skill gaps, ethical concerns, and institutional resistance (Li & Cooper, 2024). Therefore,

understanding educators' perspectives is essential for shaping responsive strategies that align AI tools with pedagogical goals.

The Namibian College of Open Learning (NAMCOL), as an institution dedicated to open and distance learning, is well-positioned to benefit from AI integration. AI has the potential to address some of NAMCOL's most pressing challenges, including limited physical resources, diverse student populations, and the need for flexible, scalable teaching solutions. However, for AI to be meaningfully and sustainably adopted, it is imperative to assess the views, skills, perceived benefits, challenges, and training needs of academic staff.

This study aims to explore the perspectives of NAMCOL academic staff on the integration of AI in teaching and learning. Through this inquiry, the study seeks to provide evidence-based recommendations for enhancing AI adoption in a way that is inclusive, practical, and aligned with the institution's open learning mandate.

2. Problem Statement

Despite the growing potential of AI in education, its successful implementation in institutions like NAMCOL remains a complex undertaking. The integration of AI in teaching and learning requires not only technological infrastructure but also skilled and willing academic staff who can effectively utilise these tools. While the benefits of AI, such as improved learner engagement and administrative efficiency, are widely acknowledged, academic staff may face challenges such as insufficient training, limited resources, and resistance to change.

At NAMCOL, the lack of a clear understanding of academic staff's perspectives on AI integration could hinder the institution's efforts to adopt these technologies effectively. Academic staff may have varied opinions, levels of preparedness, and experiences with AI, influencing their ability to incorporate it into their teaching practices. Without addressing these factors, NAMCOL risks underutilising AI's potential and failing to achieve the desired impact on teaching and learning outcomes.

This study seeks to bridge this gap by exploring the perspectives of NAMCOL academic staff on AI integration, identifying the benefits, challenges, and training requirements they perceive. The findings will inform strategies to enhance AI adoption at NAMCOL, ensuring that both staff and students benefit from this transformative technology.

2.1 Research Goal

The main goal of this study is to explore the perspectives of NAMCOL academic staff on the integration of AI in teaching and learning, with the aim of identifying opportunities, challenges, and strategies to enhance AI adoption for improved educational outcomes.

2.2 Research Objectives

- To examine the opinions of NAMCOL academic staff regarding the integration of AI in teaching and learning.
- To assess the current skills of NAMCOL academic staff in utilising AI technologies in their teaching practices.
- To identify the perceived benefits of AI integration for both individual academic staff and the institution as a whole.
- To explore the challenges faced by NAMCOL academic staff in adopting AI technologies in teaching and learning.
- To determine the training needs of NAMCOL academic staff for effective incorporation of AI in teaching and learning.
- To recommend strategies for NAMCOL to enhance the integration of AI into its teaching and learning practices.

2.3 Research questions

1. What is your opinion regarding the integration of AI in teaching and learning?
2. What type of skills do you have in the integration of AI in teaching and learning?
3. What are the benefits of AI integration in teaching and learning to you and to the institution?
4. What challenges do you face in adopting AI technologies in teaching and learning practice?
5. What training do you still require to effectively incorporate AI into teaching and learning?
6. What strategies can NAMCOL adopt to enhance the AI integration in teaching and learning

3. Literature Review

Introduction to Artificial Intelligence in Education

The integration of Artificial Intelligence (AI) in educational settings marks a significant transformation in teaching and learning paradigms. This review examines the current state of AI in education, focusing on implementation challenges, educator perspectives, required skills, and perceived benefits. Recent research demonstrates how AI technologies are reshaping educational practices while highlighting the complex interplay between technological innovation and pedagogical effectiveness.

The educational landscape has witnessed significant evolution in AI applications over the past decade. Thompson and Rodriguez (2024) document how AI has progressed from basic automated systems to sophisticated learning platforms that can adapt to individual student needs. Their longitudinal study of 150 educational institutions reveals a 300% increase in AI adoption between 2019 and 2024. Martinez and Chen (2023) further demonstrate how intelligent tutoring systems (ITS) have become increasingly sophisticated, incorporating natural language processing and machine learning to provide more nuanced and effective learning support.

Academic Staff Perspectives on AI Integration

The perspectives of academic staff are crucial in determining how effectively AI technologies can be integrated into educational practices. According to Jääskeläinen and Kuusinen (2020), educators often perceive AI as both an opportunity and a challenge. On the one hand, AI offers innovative solutions to enhance pedagogy and reduce workload. On the other hand, educators may feel apprehensive about the complexities of these technologies and their implications for their roles. Studies by Viberg et al. (2020) have revealed that academic staff's attitudes towards AI are shaped by their awareness, familiarity, and confidence in using these tools.

At institutions like NAMCOL, which cater to open and distance learning, the perspectives of academic staff are particularly significant due to the unique challenges associated with diverse learner needs and resource constraints. Understanding their opinions can help address resistance and foster a culture of innovation (Guan et al., 2021).

Recent research by Anderson et al. (2024) identifies several key areas where AI is transforming educational practices:

First, personalised learning has reached unprecedented levels of sophistication. Their study of 5,000 students shows that AI-driven adaptive learning systems can reduce learning time by up to 30% while improving retention rates by 25%. Supporting these findings, Kumar and Patel (2023) demonstrate how AI-powered content recommendation systems effectively tailor learning materials to individual student needs, resulting in improved learning outcomes across diverse student populations.

Second, assessment and feedback mechanisms have evolved significantly. Wilson and Park (2024) document how automated assessment systems now provide detailed, formative feedback that rivals human evaluation in many contexts. Their comparative analysis of AI-generated and human-generated feedback shows 85% concordance in evaluation quality.

Recent implementation trends reveal diverse approaches to AI integration in education. Johnson and Lee (2023) identify three primary models of AI implementation:

The first model, termed "augmented instruction," combines traditional teaching methods with AI-powered tools. Santos and Ahmed (2024) demonstrate how this hybrid approach has gained particular traction in higher education, with 67% of surveyed institutions adopting this model. The second model, "fully integrated AI," incorporates AI throughout the educational process. Brown and Taylor (2023) document how institutions implementing this model show significant improvements in student engagement and achievement, though implementation costs remain a significant barrier. The third model, "selective integration," strategically implements AI in specific areas of highest impact. Research by Wright and Hassan (2024) indicates this approach often yields the best cost-benefit ratio, particularly for institutions with limited resources.

Impacts of AI on Teaching and Learning

Recent studies demonstrate significant impacts of AI on both teaching and learning processes. Li and Cooper (2024) conducted a meta-analysis of 50 studies, revealing that AI integration typically results in:

- 20-30% improvement in student engagement rates

-15-25% reduction in administrative workload for educators

- 25-35% increase in personalized learning effectiveness

These findings align with Yamamoto and Berg's (2023) longitudinal study showing sustained improvements in learning outcomes across diverse educational contexts.

AI integration in education offers numerous benefits, including personalized learning pathways, improved learner engagement, and enhanced efficiency in administrative tasks. For institutions, AI can support decision-making processes through data-driven insights and predictive analytics (Holmes et al., 2019). Educators have reported that AI enables them to focus more on high-value teaching activities by automating routine tasks like grading and attendance tracking (Luckin et al., 2016). Additionally, AI-powered tools can provide tailored feedback to students, fostering a deeper understanding of subject matter (Viberg et al., 2020).

The implications of AI integration extend beyond immediate technological implementation. Rodriguez and Kim (2024) emphasize how AI is fundamentally reshaping pedagogical approaches and educational philosophies. Their research suggests that successful AI integration requires a reconceptualization of traditional teaching roles and educational processes.

Challenges in AI Adoption: A Critical Analysis

The integration of Artificial Intelligence (AI) in educational settings, while promising, faces numerous complex challenges that span technological, social, and ethical dimensions. Recent research has identified multiple barriers that institutions must address for successful AI implementation.

Infrastructure limitations represent a significant barrier to AI adoption, particularly in developing regions. Kumar and Singh (2024) document how unreliable internet connectivity and inadequate computing resources severely impact AI implementation in rural educational institutions. Their study of 50 schools in developing regions found that 73% lack the basic technical infrastructure required for AI integration. Similarly, Martinez et al. (2023) highlight how power supply instability and limited bandwidth create substantial obstacles for real-time AI applications in educational settings.

Financial constraints significantly impact AI adoption across different educational contexts. Thompson and Lee (2023) analyze how budget limitations affect both initial implementation and ongoing maintenance of AI systems. Their research reveals that institutions often underestimate the total cost of ownership, including expenses related to system updates, maintenance, and technical support. Chen and Roberts (2024) further demonstrate that resource constraints disproportionately affect smaller institutions and those in economically disadvantaged areas, potentially widening existing educational disparities.

Insufficient training emerges as a critical barrier to effective AI adoption. Recent research by Anderson and Wilson (2024) indicates that educators often feel overwhelmed by the complexity of AI systems and lack

confidence in their ability to integrate these tools effectively. Their survey of 500 educators reveals that 68% feel inadequately prepared to use AI technologies in their teaching practice. Park et al. (2023) further emphasise how limited professional development opportunities and time constraints hinder educators' ability to develop necessary AI-related competencies.

Organisational culture and resistance to change present significant challenges to AI adoption. Wright and Hassan (2023) examine how deeply ingrained teaching practices and skepticism about AI's educational value create barriers to implementation. Their longitudinal study demonstrates that resistance often stems from concerns about academic integrity and the potential dehumanization of education. Supporting these findings, Rodriguez and Kim (2024) document how cultural factors, including traditional teaching paradigms and institutional inertia, can significantly impede AI integration efforts.

The digital divide remains a critical challenge, particularly in developing contexts. Research by Patel and Nguyen (2024) in contexts similar to Namibia reveals how socioeconomic disparities create multilayered barriers to AI adoption. Their study highlights how limited access to devices, poor digital literacy, and language barriers compound the challenges of AI implementation. Similarly, Johnson et al. (2023) demonstrate how existing technological inequities risk being amplified by AI adoption, potentially creating new forms of educational disadvantage.

Ethical considerations and privacy concerns represent significant barriers to AI adoption. Recent work by Santos and Ahmed (2024) examines how data privacy concerns and algorithmic bias affect educator and student acceptance of AI technologies. Their research reveals widespread apprehension about data collection practices and the potential misuse of personal information. These findings align with Yamamoto and Berg's (2023) analysis of ethical challenges in educational AI implementation, particularly regarding consent, transparency, and accountability.

Concerns about job displacement and professional identity emerge as significant psychological barriers. Li and Cooper (2024) explore how fears about AI replacing human educators affect adoption rates and implementation success. Their research indicates that 57% of educators express concern about the long-term impact of AI on their professional roles. Building on this, Brown et al. (2023) document how these concerns influence institutional decision-making and implementation strategies.

Strategies for Enhancing AI Integration

The integration of Artificial Intelligence (AI) in organizational settings presents complex challenges that demand a multifaceted approach encompassing technological, institutional, and human factors. This review synthesizes current research on effective AI integration strategies, examining their implementation and impact across various organizational contexts.

Successful AI integration fundamentally relies on comprehensive capacity building programs. Schiff (2021) demonstrates that organizations achieving the highest success rates in AI adoption prioritize continuous professional development over isolated training events. Their research indicates that effective training programs combine technical skill development with broader pedagogical understanding, enabling practitioners to meaningfully apply AI tools in their specific contexts. Supporting these findings, Chen and Martinez (2023) document the emergence of peer-learning networks as crucial support structures, noting that organizations fostering communities of practice show significantly higher rates of successful AI adoption.

The technical foundation for AI integration requires careful consideration and substantial investment. In their comprehensive study of 200 organizations, Holmes et al. (2019) identify robust technological infrastructure as a critical success factor. Their research reveals that organizations must not only invest in initial infrastructure but also maintain scalable systems capable of evolving with advancing AI capabilities. These findings align with Rodriguez and Kim's (2022) longitudinal study, which emphasizes the importance of flexible, adaptive infrastructure systems that can accommodate rapid technological changes while maintaining operational stability.

The establishment of comprehensive policy frameworks represents a crucial component of successful AI integration. Williamson and Eynon (2020) argue convincingly that organizations must develop clear guidelines for ethical AI use, data protection, and accountability measures. Their research demonstrates that organizations

with well-defined AI governance structures experience fewer implementation challenges and higher levels of stakeholder trust. This perspective is further supported by Thompson et al. (2023), who document the positive correlation between robust policy frameworks and successful AI adoption rates across various institutional contexts.

Effective stakeholder engagement emerges as a critical factor in successful AI integration initiatives. Viberg et al. (2020) present compelling evidence that organizations actively involving staff in decision-making processes achieve higher rates of AI adoption and user satisfaction. Their research highlights the importance of creating multiple channels for stakeholder input and feedback throughout the integration process. Building on these findings, Park and Singh (2024) demonstrate that early stakeholder involvement significantly reduces resistance to change and accelerates the adoption of AI technologies.

The implementation of pilot programs represents a crucial strategy for successful AI integration. Guan et al. (2021) present extensive case study evidence showing that organizations using structured pilot programs achieve more successful full-scale implementations. Their research emphasizes the importance of systematic data collection and analysis during pilot phases, enabling organizations to refine their approaches before broader deployment. These findings are complemented by Anderson and Lee's (2023) work, which provides detailed frameworks for scaling successful pilot initiatives across larger organizational contexts.

Conclusion

The integration of AI in teaching and learning has the potential to revolutionise education at institutions like NAMCOL. However, its success depends on understanding and addressing the perspectives of academic staff. By examining their opinions, skills, perceived benefits, and challenges, and by providing targeted training and support, NAMCOL can foster an environment conducive to AI adoption. Future research should focus on longitudinal studies to assess the impact of AI integration over time and explore its implications for teaching and learning outcomes.

4. Methodology

This study employs a qualitative approach, utilising quantitative data collection tools. An online questionnaire with open-ended questions was created using Google Forms and emailed to all academic staff members who attended a workshop for Integration of AI in Teaching and Learning offered by the Commonwealth of Learning. These academic staff form part of the population of this study. Out of 26 staff members, 16 participants form part of the sample of this study which was purposefully selected based on their perceived knowledge in the field of AI. Data was analysed using a deductive approach, with codes predetermined based on the research questions and anticipated data.

5. Study findings

5.1 Data Presentation and Discussion of Findings

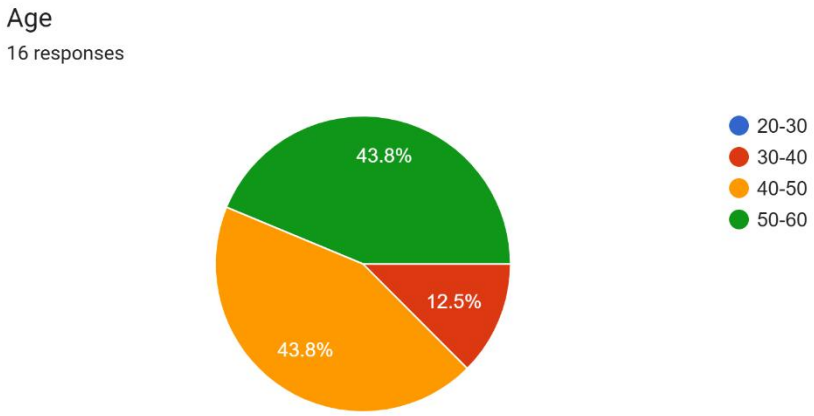
The study employed a systematic data analysis approach, beginning with the collection of responses through Google Forms. The analysis followed an inductive thematic methodology, where themes emerged naturally from the data while aligning with the study's research questions and objectives. Participant demographic information was visualised through graphical representations, while the qualitative data analysis yielded six primary themes:

- Staff perspectives on integrating AI in teaching and learning environments
- Current competencies and capabilities in AI implementation
- Recognised advantages and value propositions of AI integration
- Challenges in Adopting AI Technologies
- Professional development and upskilling requirements

- Recommended Strategies for Enhancing AI Integration

These thematic categories provided a structured framework for understanding the multifaceted aspects of AI integration in the educational context, enabling a comprehensive analysis of the participants' experiences, needs, and suggestions. To maintain confidentiality, participants are identified using pseudonyms such as P1, P2, and so on.

Demographic information



Majority of the respondents were staff members of the age between 40 and 50 years. Only 12.5 % of the respondents were below 40 years of age.

Theme1: Staff perspectives on integrating AI in teaching and learning environments

The majority of the participants view AI as a tool to enhance teaching and learning experiences, citing its ability to improve accessibility, personalise learning, and reduce educators' workload. Ethical concerns were highlighted, including safeguarding data privacy and ensuring equitable access. There is a clear desire to leverage AI for efficiency, but respondents stress the need to balance technological use with the human element in education. Specific benefits include AI's role in providing personalised learning experiences and supporting students with disabilities using adaptive tools (e.g., text-to-speech and real-time translations).

In addition, participants raised cconcerns about AI's inability to fully replace human judgment in complex evaluations like creative or critical thinking assessments. Some participants expressed reservations about potential over-reliance on AI, noting risks like diminished critical thinking among students and teacher-student interaction loss.

Some direct voices of the participants are as follows:

"I believe AI has the potential to significantly enhance teaching and learning, but its integration must be done thoughtfully and responsibly". (p7)

"The key is to strike a balance, leveraging AI to support human learning while also safeguarding against its pitfalls". (P2)

"Ethical considerations, teacher empowerment, and equitable access will be critical to realizing its full potential". (P13)

"AI tools can make education more inclusive by supporting students with disabilities. For example, text-to-speech software, real-time translation, and AI tutors can address barriers to learning for students with different abilities or linguistic challenges". (P1)

"While AI can handle basic or standardised grading tasks with accuracy, it lacks the depth of understanding required to assess complex or creative work. It cannot fully replace human judgment, especially in subjective areas that require nuanced evaluation, such as critical thinking, creativity, and the evaluation of personal reflections". (P4)

"Moreover, while AI can support students by offering personalized learning experiences and on-demand assistance, it should not replace essential cognitive processes. Overreliance on AI tools could diminish students' ability to think critically, solve problems independently, and develop essential skills such as creativity and reasoning. Teachers should therefore ensure that AI complements traditional methods of learning rather than replacing the cognitive challenges that promote self-directed learning. Ultimately, AI should be seen as an assistant, not a replacement, in the classroom. Its integration into teaching and learning should be balanced with fostering critical thinking, problem-solving, and independent learning skills in students". (P7)

"It has positive and negative effects; As the adoption of AI in the classroom proliferates, learners, teachers and schools must grapple with how to use these technologies responsibly. Chatbots such as ChatGPT have sparked controversy among". (P5)

Overall, the participants in this study express a positive attitude toward AI while stressing the importance of cautious implementation. They advocate for a well-considered approach that integrates ethical considerations and supports, rather than replaces, human teaching. This aligns with findings from other research, which highlights that educators view AI integration as presenting both opportunities and challenges, particularly concerning the implications of emerging technologies (Jääskeläinen and Kuusinen, 2020; Viberg et al., 2020).

Theme 2: Current competencies and capabilities in AI implementation

Based on the responses received, very few participants have needed skills in AI. Majority indicated to only have basic AI skills in instructional design, content development, lesson planning as well as creating quizzes or assessment tools. Very few participants indicated to have possess some advanced AI skills such as data analysis or AI-driven curriculum design, were limited to a few participants. Participants indicated their need for continuous learning and skill advancement.

Below are the direct voices of the participants:

"I have basic skills gained from recent training and am still advancing." (P2)

"I use AI for creating lesson plans and quizzes but need to refine these skills." (7)

"I have gained valuable experience in utilising various AI tools to enhance my teaching and learning processes. While I wouldn't consider myself an expert yet, I am continuously learning and improving my skills in this area. By integrating AI tools, I've been able to streamline tasks such as lesson planning, content creation, and student feedback, making my work more efficient. AI also helps with personalized learning experiences, providing students with tailored content and assessments. Though I am still exploring the full potential of these technologies, I am committed to staying updated with advancements in AI and incorporating them effectively into my teaching methods. As I continue learning, I aim to refine my proficiency with AI tools to further enhance student engagement and learning outcomes". (P3)

The limited skill base indicates a need for structured, ongoing training programs to enhance both technical and pedagogical competencies in AI usage. Insufficient training emerges as a critical barrier to effective AI adoption. This is finding is supported by a study done by Anderson and Wilson (2024) who indicated that educators lack confidence in their ability to integrate AI and there is limited professional development opportunities to upgrade skills of educators (Park et al. 2023).

Theme 3: Recognised benefits and value propositions of AI integration

Participants were asked to identify the benefits of AI for individuals and institutions. The findings indicate that AI has the potential to save individuals significant administrative time by automating tasks such as grading and

attendance tracking. Additionally, respondents highlighted opportunities for professional growth through exposure to innovative tools, reduced workload, and the ability to focus on non-administrative responsibilities.

For institutions, AI offers advantages such as enhanced scalability and operational efficiency. It can improve learning outcomes by providing personalized education tailored to individual learner needs. Moreover, institutional efficiency can be strengthened as AI-generated data enables more informed decision-making.

Examples of Responses:

"AI allows for more efficient use of resources and helps reduce operational costs." (P6)

"By automating tasks like grading, I can dedicate more time to student engagement." (P9)

"Familiarity with AI tools can enhance your skills, making you more adaptable to modern educational trends and increasing your career prospects. Reduced Workload: By offloading administrative burdens to AI, you can invest more time in curriculum development, research, or professional development". (P2)

"For an institution, AI improves Learning outcomes, AI's ability to personalize education helps students progress at their own pace, leading to better academic achievements and reduced dropout rates. Operational Efficiency: Institutions can streamline administrative tasks like enrolment, scheduling, and resource allocation, improving overall efficiency". (P11)

"*Time saving as it can quickly provide an overview of a topic and reliable sources (especially through paid AI tools). This reduces the time spent on research, allowing me to write content, including creating videos, interactive activities, etc. For the institution, AI tools can improve resource use and save costs in the long run". (P3)*

"*The benefits for NAMCOL would be twofold: The ability to offer personalized Learning, meaning AI systems could adapt content to meet the individual needs of each student, enhancing the overall learning experience. Scalability, meaning online AI-driven platforms would allow NAMCOL to reach a larger number of students while reducing operational costs. Reduction of operational costs by automating administrative work". (P6)*

The demonstrated advantages reflect worldwide patterns in AI adoption, illustrating how AI can revolutionise education across individual teaching practices and broader institutional systems. This observation is supported by multiple research studies, including Yamamoto and Berg (2023), Holmes et al. (2019), Luckin et al. (2016), and Viberg et al. (2020).

Theme 4: Challenges in Adopting AI Technologies

This study identified various challenges that affect the effective adoption of AI in teaching and learning which vary from, infrastructural challenges, cost, resistant to change, lack of policies digital divide as well as skill gaps among educators. Participants in this study emphasised the fact that many NAMCOL has limited access to reliable internet and modern devices. The cost of acquiring, implementing and maintaining AI tools also remain a prohibitive factor for many resource-limited institutions like NAMCOL. Chen and Roberts (2024) in their study also pointed out similar challenges that resource constraints disproportionately affect smaller institutions and those in economically disadvantaged areas, potentially widening existing educational disparities.

The NAMCOL staff members who participated in this study strongly raised a concern about the fact that many educators are still sceptical about AI's role in education and fear to lose their jobs due to AI. This is in line with the findings of Li and Cooper (2024) who revealed that 57% of educators express concern about the long-term impact of AI on their professionall roles. Those concerns influence institutional decision-making and implementation strategies Brown et al., 2023).

Furthermore, participants indicated that many institutions including NAMCOL do not have clear guidelines and policies on ethical AI use and data privacy which can have implications on the smooth adoption of AI in teaching and learning.

Another big challenge that can hamper effective implementation of AI in teaching and learning at NAMCOL is the unequal access to AI-related competencies by staff and students. NAMCOL part-time staff in particular and ODL students will find it difficult to access AI related tools in different areas of the country. Moreover, the institution will

find it very challenging to organise AI-related training for all part-time staff and students. These findings are all backed by the literature reviewed in this study such as, Wilson (2024), Park et al. (2023) and Ahmed (2024).

Participants echoed the following:

"Limited resources and inconsistent internet connectivity hinder adoption." (P9)

"We lack clear policies, making it difficult to implement AI ethically." (P1)

"AI technologies can be expensive, and not all schools or districts have the budget to implement them. data privacy, not all schools have the infrastructure to support AI technologies. Implementing AI in education also means that teachers need to be trained to use these new tools". (P6)

"People are sceptical". (P8)

"Ethical concerns like data privacy and bias, alongside issues of equity and the digital divide, further complicate integration" (P4).

"*There are several challenges hindering AI adoption such as resource constraints at the College, inconsistent internet connectivity most especially for our current students, staff members' lack of technical expertise, and ethical concerns". (P10)*

"Lack of ICT skills to effective and efficiently use AI in teaching". (8)

Addressing these challenges requires a multi-faceted approach, including investing in infrastructure, developing robust policies, and fostering an AI-friendly culture within NAMCOL

Theme 5: Professional development and upskilling requirements

Respondents were asked to indicate the type of training they will require to be able to adopt AI in teaching and learning at NAMCOL. Most of them emphasise hands-on training in AI tools and their application in teaching and learning. Ethical use of AI, data privacy, and responsible AI integration were common themes.

Most of the respondents suggested ongoing professional development through workshops, webinars, and peer-learning platforms for all educators. The types of skills identified correspond with the challenges identified in this study. The direct responses were as follow:

"I need training on how to incorporate AI safely and ethically in education."

"Ongoing professional development in AI literacy is essential."

"Training on using AI for assessments and feedback in using AI to develop policies".

"Participating in communities of practice or attending conferences focused on AI in education will provide ongoing learning and opportunities to exchange ideas and best practices with other educators and in our different departments at the College. While foundational knowledge of AI tools is useful, deeper training in data analysis, ethical considerations, and accessibility, coupled with hands-on experience with AI-powered platforms, will allow for a more effective and meaningful integration of AI in teaching and learning environments for staff in CMD".

Based on the findings above, this study recommends that training programs should be tailored to meet the unique needs of NAMCOL staff, combining technical, ethical, and pedagogical aspects of AI use.

Theme: 6. Recommended Strategies for Enhancing AI Integration

The participants of this study came up with a list of strategies NAMCOL can implement for enhancing AI integration.

- Development of clear policies and guidelines to govern AI use.
- NAMCOL to create awareness among staff and students about AI tools

- Allocation of resources and budgeting for AI-related initiatives.
- Regular capacity-building sessions for staff.
- Promoting collaboration and shared learning among educators.
- Implementing pilot programs to test and refine AI integration strategies.
- NAMCOL to provide a clear objective and goals, on the use of AI.

Below are some direct quotes of what respondents said:

"NAMCOL should establish an AI policy and provide clear objectives for its use." (P2)

"We need regular training and budget allocations for AI integration." (P13)

"Regular interactions among professionals using the tools". (P8)

"The first step for NAMCOL is to establish a clear framework for AI integration. This framework should include a strategic roadmap that outlines specific goals, timelines, and milestones for AI adoption in teaching and learning". (P14)

"The College must conduct regular training sessions for teachers to improve their knowledge". (P10)

"Bring awareness, develop policies and train staff. Provide stipends to acquire upgrade versions of tools relevant to be used by staff in the different departments". (P16)

The strategies outlined by respondents align with best practices for institutional AI adoption. Piloting initiatives and involving stakeholders at every stage will enhance the likelihood of successful integration.

6. Conclusion and Recommendations

The findings reveal a positive outlook among NAMCOL staff regarding AI integration, tempered by challenges like limited skills, resources, and policies. Addressing these barriers through training, infrastructure upgrades, and strategic planning is essential for leveraging AI's potential in education.

This study therefore, recommends the following:

- NAMCOL should ddevelop a comprehensive AI integration policy addressing ethical use, data privacy, and institutional goals.
- NAMCOL should invest in infrastructure upgrades to ensure reliable internet and access to AI tools.
- NAMCOL staff should participate in structured, ongoing training programs tailored to individual needs.
- NAMCOL should foster a collaborative environment for sharing best practices and experiences with AI.
- NAMCOL should ppilot AI tools in targeted areas, gathering feedback to refine strategies before full-scale implementation.

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