



Leveraging Artificial Intelligence in Assessments: Good Practices Through the Traffic Light Model

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Keywords

Traffic Light Model; higher education; assessments; artificial intelligence; good practices.

Abstract

The utilisation of artificial intelligence (AI) in assessments is making headway and is increasingly changing the landscape of the field of education. The leaders and policymakers of higher education institutions should be cognisant of their significant role in ensuring that AI is used responsibly and ethically and implemented with human oversight. The two objectives of this study were firstly to determine the lecturer's perspectives and experiences with implementing the Traffic Light Model in assessments. Secondly, the lecturer's insights should be leveraged to inform policy development and further implementation of TLM in the institution. The results of this inquiry provided a platform for policymakers to acknowledge and review the improvements that can be made with implementing the Model.

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1. Introduction and Background

The integration of AI in higher education has recently gained significant attention, prompting institutions of higher learning to explore not only innovative but also ethical and responsible approaches to harness its potential. In South Africa, the South Africa National Artificial Intelligence Policy Framework, in its current policy development phase, heavily relies on various types of evidence to inform policy decisions (South Africa Department of Communications and Digital Technology, 2024). With limited empirical research on the factors that influence the successful implementation and operation of AI-models in the educational setting (Abolina, Mežinska and Ľubkina 2024), the study assumes significance as it aims to identify and share lecturer's perspectives, experiences and best practices that could inform policy development within the institution, aligning with the broader objectives of the national framework.

A significant research gap exists in the current literature regarding the perspectives and experiences of lecturers in implementing AI-driven models in the educational setting (Mutanga, Jugoo & Adefemi, 2024). Since this higher education institution implemented the Traffic Light Model (TLM) in assessments, it was imperative to conduct a research study that allows lecturers to share their experiences and practices. This is critically important as institutions face pressing challenges to balance technological innovation and academic integrity. The two research questions that guided the study were:

- *What are the perspectives and experiences of lecturers regarding implementing the Traffic Light Model in assessments?*
- *How can the institution leverage the insights of lecturers regarding the Traffic Light Model to inform further policy development?*

This study aimed to provide discourse on best practices from the perspectives of the lecturers who have implemented the model. The significance of this study's findings will contribute to evidence-based guidelines for further effective integration of the TLM, institutional learning and policy development.

2. Literature Review

2.1. Introduction

Higher education in South Africa is currently undergoing a revolution due to the impact that AI is having on teaching methods, educational quality, equity, and social connections within academic institutions. Even though AI has the potential to significantly alter the educational process and prepare graduates for the workforce, the utilisation thereof raises multifaceted challenges (Tovalin-Ahumada, 2023). However, it must be acknowledged that the AI revolution in higher education presents several opportunities for personalised instruction, efficient enhancement of assessments, automation of administrative tasks, and furthermore, provide graduates with essential skills for the industry (Mittal 2023).

Sharing good practices

Lecturers have the potential to improve learning outcomes, student engagement, and the overall environment of the classroom by sharing best practices in assessment. According to Isnaini, Sunimaryanti and Lesis (2021), sharing good assessment practices enhances reliability, promotes collaborative learning, improves feedback mechanisms, and fosters continuous improvement in teaching strategies, ultimately benefiting both lecturers and students. In this article, we explore good practices, particularly because it enables lecturers to reflect on how they may enhance their teaching and learning and, moreover, promote institutional learner and cross-campus knowledge transfer. This is particularly vital as it can serve as a mechanism to increase student success and decrease the percentage of students who fail their assessments (Pinto, et al. 2020).

AI Traffic Light Model Matrix (AIMAT) in assessments

As part of an AI-integrated assessment strategy, the institution works on a classification system that operates on three levels, known as the three-tier categorisation. This three-tier categorisation is linked to three colours, red, amber, and green which are clearly and comprehensively differentiated from

one another. They are designed to achieve the goal of establishing a mutual understanding between the lecturers and the students regarding the utilisation of AI technologies in a particular assessment. Furthermore, this includes the level of their application and the timing of their presence throughout the assessment process. There are two distinct approaches to leveraging this Model. Firstly, lecturers can make use of the categories to develop assessments. Secondly, students make use of the Model to complete assessments in ways that will not hamper their ability to study.

As stated by Leeds University (2024), the red categorisation indicates that AI tools are not permitted to be utilised in an assessment. In the assessment, the amber indicates that AI should be utilised in an assisted capacity, while the green shows that AI should be used in an integrated role and should be employed in the assessment. As a result, and based on the conceptual framework underlying the TLM, the institution has introduced an AI Matrix Model also named the AIMAT Model in assessments as a measure of ensuring ethical and responsible use of AI.

2.2. Policies around using AI in assessments

The implementation of policies regarding AI in assessments is essential for the protection of privacy, accountability, equity, and justice and, furthermore, to prevent potential biases (Calo, 2018). There are numerous reasons why policies regarding the use of AI in assessments in higher education are essential. Firstly, the rapid advancement and pervasive adoption of AI in education require a re-evaluation of conventional academic integrity mechanisms (Ardito, 2023). As AI tools become more accessible to students, the risk of plagiarism and deception increases, underscoring the necessity of effective implementation guidelines (Song, 2024). Secondly, to preserve academic integrity and equip students for a future that is driven by AI.

Institutions can maintain academic standards and mitigate risks while leveraging the advantages of AI in education through the implementation of comprehensive guidelines (Slimi, 2023; Zhou et al., 2024). While this institution is in the process of the developing AI policies, the current guidelines are aligned with the South Africa National Artificial Intelligence

Policy Framework’s overarching objectives that include ensuring the ethical and responsible use of AI, mitigating bias, ensuring fairness, the equitable distribution of AI resources, promoting AI education and establishing guidelines for human oversight (South Africa, Department of Communications and Digital Technology, 2024:11). Additionally, the institutional guideline specifies how existing policies guide transgressions, an academic integrity course, and the Plagiarism Pledge.

It is imperative that higher education institutions establish explicit objectives and policies to ensure the ethical, inclusive, and equitable use of AI in assessments (Song, 2024). It is therefore recommended that the policy also encompass provisions related to ethical implications, cultural differences, language proficiency, and privacy (Wang et al., 2023).

Ethical and responsible use of AI

Fairness, transparency, security, privacy, and responsibility are all components of ‘responsible AI’. Institutions are working to ensure moral behaviour by advocating for monitoring and self-regulation, particularly for high-risk applications (de Laat 2021). According to Astobiza's, et al. (2022) research, it has been discovered that sticking to human rights ideals, maintaining inclusion, and constructing a governance structure are all effective means of addressing the power imbalances that exist between the global north and south. These power imbalances are essential for the ethical and responsible utilisation of AI (Astobiza, et al., 2022).

Responsible use of AI emphasises the importance of ethical frameworks to govern the development and application of AI in assessments (Taylor, et al. 2018). This is done to guarantee that the decision-making processes are fair, accountable, and transparent. According to Scantamburlo, Cortés, and Schacht (2020), ethical and responsible conduct in assessments that involve AI requires multidisciplinary discussions, collaborations with stakeholders, and the active involvement of the public. This action is essential and must be undertaken to build confidence and address ethical, legal, social, economic, and cultural ramifications (Scantamburlo, Cortés and Schacht, 2020).

2.3. Theoretical framework

The landscape of this study is underpinned in the theoretical framework of John Dewey, who provides a cornerstone for progressive education. Rather than being the passive dissemination of knowledge and regulations, he thought that education should be an active process of questioning and problem-solving. Additionally, he made the case that education should equip students to live in a democratic society and take part in innovation and social change. According to an article by Kai (2023), the four main tenets of Dewey's educational theory were experience, integration, utility, and interest.

Utility: According to Dewey, the knowledge that students acquire should apply to their daily lives and should be beneficial to for their development. He argued in favour of a curriculum that considers the needs and interests of both society and learners, criticising traditional education for being overly abstract and detached from reality. For this reason, we say that the assessment process may include the use of AI as this is relevant and responsive to student learning.

Interest: Since students' interests are the innate wellspring of curiosity and inquiry, Dewey also thought that curriculum content should consider such interests. He determined that learners mostly focus on four areas: creative expression, construction, discourse, and inquiry. He advised educators to incorporate these activities into their lesson plans since they encourage student participation, communication, inquiry, and creativity. For instance, Dewey suggested that professors encourage student conversations about historical events and their relevance to the present rather than giving lectures about history. Dewey sought to pique pupils' curiosity and ignite their love for learning.

Experience: Experience was the most important concept to Dewey since he saw it as the main source of information and education. He asserted that although students can spend all day learning abstract ideas, they might never fully comprehend them unless they put them into practice. He promoted an approach to education that prioritises learning over reading or listening or experiential learning. He recommended that educators allow students to participate in experimentation, project-based learning, and practical

experiences that enable them to apply their knowledge and abilities to actual circumstances. Dewey felt that by giving students rich and varied experiences, he would improve their understanding and memory. It is, therefore, imperative to note that while theoretical knowledge of AI is essential, experiential learning is equally crucial since it is a vital component of comprehensive education. Using AI in assessments, therefore, provides an experience of learning that is relevant and useful in the 21st century.

Integration: According to Dewey, curriculum information should be integrated into a comprehensive and coherent whole rather than being divided into distinct courses or specialties. He maintained that information is linked and interlinked rather than solitary or fragmented. He urged educators to demonstrate to pupils the connections between ideas in various courses and the wider world. He suggested that educators employ interdisciplinary teaching strategies to help students investigate a subject from several angles and fields of study. Dewey sought to develop critical thinking and problem-solving abilities by encouraging the integration of knowledge (Kai 2023). The integration of AI in assessments thus have the potential in guiding students to see relationships between different areas of knowledge.

By making learning more experiential, comprehensive, meaningful, engaging, and enthusiastic, John Dewey's four educational tenets can enhance learning results. His approach to education is still relevant today because it pushes educators to reconsider their job descriptions and consider themselves facilitators of learning rather than information providers. Hence, it is necessary to emphasise that lecturers should foster a more democratic and student-centred learning environment that better equips pupils for 21st-century living by implementing their ideas in the classroom using AI.

A formative assessment tool, the Traffic Light Model divides student development into red, yellow, and green. AI augments this concept by offering real-time, adaptable feedback, therefore supporting experiential learning. AI guarantees that tests are relevant and significant for the real-world demands of students, so they foster utility. Moreover, by customising treatments depending on student interests, AI promotes involvement and inquiry. AI's inclusion into the TLM also fosters cross-disciplinary links,

hence supporting Dewey's focus on comprehensive learning. Finally, this paper contends that, in line with Dewey's vision of education, AI-driven assessments inside the Traffic Light Model produce a more democratic and student-centered learning environment. AI guides students toward meaningful, integrated, and experience-based learning for the 21st century.

3. Methodology

The inquiry utilised a qualitative design, and data were collected through a digitised questionnaire that consisted of eight questions. The digitised questions were deliberately structured to elicit the participant's perceptions and experiences regarding the ethical use of AI in the institution, the institutional policies, guidelines and best practices that govern the implementation of the AIMAT model. This method was cost-effective, allowing efficient and in-depth participant reflection that ensured validity through the standardisation of the questions. Earthy and Cronin (2008:1) state that qualitative approaches have a long-standing relation with social research, particularly since they assist the researchers in comprehending the process behind the observed results and, furthermore, because the researcher considers the thoughts and perspectives of the participant (Gundumogula, 2021:299).

The population of the study included six lecturers from five disciplines who were implementing the TLM in assessments on one campus. Initially, 12 lecturers on the campus were invited to participate but only six responded. Purposive, convenience sampling was done, as this was a small-scale study and participants who were easily accessible and can provide valuable initial insight were invited to participate. The various schools included the School of Education (SOE), School of Commerce (SOC), School of Media and Design (SOMAD), School of Engineering and Architecture (SOEAA) and School of Information Technology (SOIT). Informed written consent was given by all participants prior to the commence of the data collection. No harm was done to any participant, and the anonymity and confidentiality of all the participants were maintained throughout. Data were collected

voluntarily, and all six participants were at liberty to withdraw their responses provided at any time.

This study drew on the theoretical lens of John Dewey's educational philosophy based on four core principles, namely, utility, interest, experience, and integration (Qosimov, 2023). The philosophy allowed an interdisciplinary approach where AI and the TLM were integrated into assessments across disciplines. Moreover, it was envisaged that this framework bridges the gap between technology and pedagogy, that attempts to prepare lecturers who are navigating the complexities of an ever-changing learning environment. This theory was purposefully selected as we anticipated that lecturers have prior knowledge of the theory, either gained from professional workshops within the institution or academic pursuits. This was particularly important as the theory provided a lens through which responses were thematically analysed and interpreted.

4. Data Analysis and Findings

The analysis of the responses provides discourse on the eight pre-determined questions that were formulated. These questions were purposefully formulated to ensure that the digitised questionnaires effectively capture the complete content of responses. The objective was to establish whether the AIMAT Model does amplify ethical and responsible use of AI in assessments and furthermore, the practices lecturers can share that will ultimately inform policy and ensure the continuity of the Model within the institution.

Figure 1: Biographic of participants

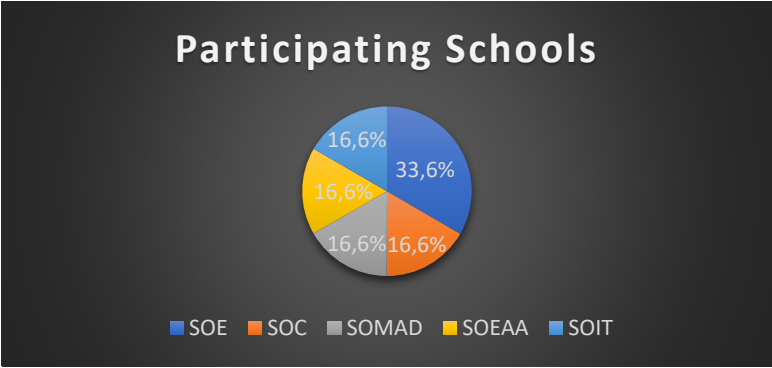
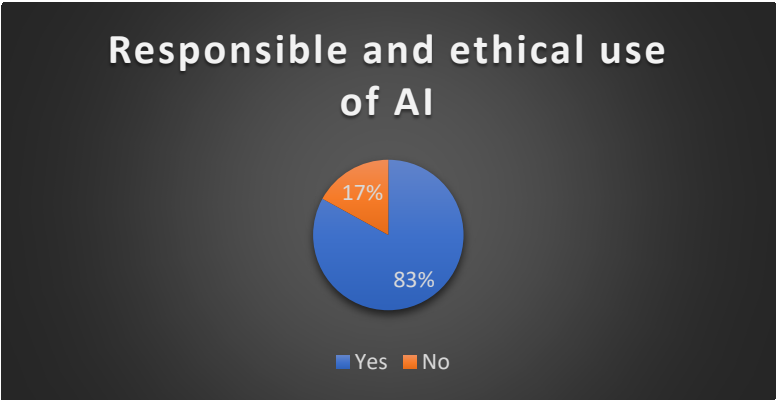


Figure 1 demonstrates the different schools from one campus in the private higher education institution that partook in the study. Out of the 12 participants identified from the different schools, 6 participated in the study.

The results indicate that 33,6% of the population are form the School of Education (SOE), 16,6% from the School of Commerce (SOC), 16,6% from School of Media and Design (SOMAD), 16,6% from School of Engineering and Architecture (SOEAA) and 16,6% from the School of IT (SOIT).

Figure 2: Responsible and ethical use of AI



The results show that 83% (five of the six) of the participants agree that the

AIMAT Model promotes responsible and ethical use of AI, while 17% (one of the six) is not in agreement.

The participants were asked the following question: Does the AIMAT Model promote responsible and ethical use of Artificial Intelligence in assessment?

Figure 2 presents the replies provided by the participants. Five out of the six participants concur that the AIMAT Model effectively encourages the responsible and ethical use of AI in assessment, whereas one participant holds a contrary opinion.

4.1. Enhancing Ethics in AI-Assisted Assessments

Participants were asked: How does the AI Traffic Light Model enhance ethics in assessments? The questions displayed a range of viewpoints from participants, highlighting several facets of the ethical assessment process in education, especially when including AI. The collective comments demonstrate the intricacies and prospects that AI offers for ethical deliberations in scholarly assessments. The responses indicate that the AIMAT Model provides several ethical improvements in assessments. It promotes fairness through the regulation of information access (Participant A), guarantees objectivity and consistency in assessments (Participant B), and fosters transparency (Participants D and E). Concerns exist regarding the ethical use of AI by students (Participant C), highlighting the necessity for clear guidance and education (Participant F).

4.2. Ensuring *the Responsible Use of AI*

Responses to the question, "How do you ensure the responsible and ethical use of AI with your students?" indicated the variety of strategies lecturers are employing to encourage moral behaviour when utilizing AI in the classroom. These responses show the variety of approaches required to help students develop ethical behaviour, accountability, and AI literacy. Some participants prioritize the establishment of clear, formal guidelines (Participant A), whereas others highlight the significance of accountability (Participant B), formal communication (Participant C), and practical guidance (Participant D). The perspectives of Participant E on open discussions and Participant F

on the consequences of AI use when the utilization thereof is prohibited exemplify the diverse approaches lecturers can adopt regarding this issue.

4.3. Institutional policies and guidelines

Answers to the question, "What policies or guidelines does the institution have in place to ensure the ethical use of AI in student assessments?" show that there is still some variance in the maturity and focus of these standards, even while the institution is starting to put systems and policies in place to address the ethical use of AI. The responses emphasize a combination of current guidelines, ongoing projects, and AI-specific modifications meant to uphold academic integrity. The findings suggest that the institution is at different phases in the development and implementation of policies aimed at ensuring the ethical use of AI in student assessments. Some participants depend on established frameworks, such as plagiarism policies (Participants B and F), whereas others have created specific standard operating procedures (SOP's) or are incorporating AI-related guidelines into the assessment framework (Participants A and E). Institutions referenced by Participants C and D are in the process of developing or refining their AI-specific policies, indicating the persistence of this challenge.

4.4. Strategies for Advancing Ethical AI Implementation

The responses to the question, "What enhancements would you propose to improve the ethical use of the Traffic Light Model and AI in assessments?" This question was asked to examine diverse viewpoints on how the institution can enhance and fortify its strategies for ethical AI implementation in the academic environment. The recommendations offer insights into practical and policy-oriented enhancements that may improve the effectiveness and ethical implementation of AI in assessments. The proposed enhancements illustrate various strategies for improving the ethical application of the TLM and AI in assessments, emphasizing clarity, organization, and student involvement. Multiple participants highlighted the necessity for improved guidelines, rubrics, and practical assessment models (Participants B, C, and D). Some propose improvements in the education of students regarding AI

utilization, either through informed choice (Participant A) or scenario-based training (Participant E).

4.5. Best Practices

The responses to the question, "What best practices emerged from the implementation process of the AIMAT Model that you would recommend to other institutions?" provide a variety of perspectives on how to apply AI to assessments in an efficient manner and how to best utilize the AIMAT Model in educational environments. These best practices emphasize how crucial it is for the moral and responsible integration of AI into education to have systems that are broad, flexible, and engaging for students. The best practices derived from the implementation of the AIMAT Model provide significant insights for institutions contemplating AI integration in assessments. The practices highlight the importance of a thorough comprehension of the Model (Participant A), adaptability in its implementation (Participant C), and extensive training for all involved parties (Participant D). Furthermore, offering students options and resources (Participant B) fosters engagement and responsible AI utilization, while the Model's deterrent effect (Participant E) and its overall significance (Participant F) emphasize its capacity to improve academic integrity.

4.6. Successful interventions

The responses to the question, "Can you share any successful practices or interventions that have emerged from this matrix/model?" indicate several beneficial outcomes and practices resulting from the application of the AIMAT Model. The responses indicate that the Model has contributed to increased student awareness, accountability, and engagement with AI tools while also identifying areas for enhancement. The practices and interventions presented by the participants indicate that the AIMAT Model has positively influenced various domains, such as student expression and knowledge interpretation (Participant A), ethical exploration of AI tools (Participant B), heightened awareness of AI utilization (Participant C), and accountability through record-keeping (Participant D). Participant F's observation of increased honesty in disclosing AI usage indicates enhanced transparency in

assessments. Although Participant E did not present a specific success story, the collective responses indicate that the matrix is promoting a more ethical and reflective application of AI among students.

5. Discussion

Based on the participant's responses to the various questions, the discussion on the implementation and impact of the AIMAT Model illustrates both the benefits and challenges of incorporating AI into student assessments ethically and responsibly. Throughout the responses, key themes such as awareness, transparency, ethical participation, and institutional support are seen as critical to creating a positive climate for AI use in education.

5.1. Enhancing Ethics in AI-Assisted Assessments

Participants provided varied responses regarding the AIMAT Model's enhancement of ethics in assessments. Participants highlighted improvements in information access (Participant A) and emphasizing objectivity, bias reduction, and consistency (Participant B). Multiple participants emphasized the necessity of offering structured frameworks (Participant E) and guidelines for AI utilization (Participant F). The responses collectively underscore the significance of the AIMAT in fostering a transparent and equitable approach to assessments.

Some participants raised concerns regarding the correct and ethical use of AI by students (Participant C), indicating that ethical issues persist despite the Model's implementation. The necessity for evidence-based practices, exemplified by the requirement for students to submit screenshots of AI usage (Participant D), underscores the significance of accountability in the utilization of AI tools. The perspectives indicate that although the Model serves as a significant instrument for improving ethics, its successful implementation is contingent upon the extent to which institutions assist and direct students in the ethical use of AI.

The literature's emphasis on AI's transformative role in education is reflected in the study, which underscores the benefits of AI in assessments by reducing

bias and increasing objectivity (Participant B) (Mittal, 2023). The AIMAT Model which categorises AI use into red, amber, and green categories, is specifically focused on enhancing ethics. The participants observed that this Model contributes to the transparency and clarity of assessments (Participant E, F), which is consistent with the literature's description of how the Model fosters mutual understanding between students and lecturers. The literature's emphasis on the ethical use of AI and the maintenance of accountability, as discussed by de Laat (2021), is consistent with the concerns of students (Participant C) regarding the correct and ethical use of AI.

The results imply that by increasing objectivity, lowering bias, and supporting openness, the AIMAT Model significantly helps to improve ethics in AI-assisted tests. Participants agreed that a major component in helping students toward ethical AI usage is the disciplined framework of the model. Though the model is a major ethical tool, issues about the appropriate and responsible use of AI remain unresolved since institutional support and student direction determine its efficacy. Emphasizing AI's transforming power in education and the requirement of unambiguous ethical guidelines, the literature supports these conclusions. The way the AIMAT Model classifies AI use fits past research stressing responsibility and openness in assessments. Still, constant institutional work is needed to solve ethical issues and guarantee that students have the tools they need to use AI ethically. In essence, even though the AIMAT Model is a useful tool for encouraging ethics, its effectiveness depends on institutional regulations, constant monitoring, and student teaching.

5.2. Ensuring the Responsible Use of Artificial Intelligence

Participants identified several best practices for the responsible and ethical use of AI, including the establishment of guidelines (Participant A) and the provision of evidence regarding student interaction with AI (Participant B). Some participants highlighted the necessity of engaging in open discussions regarding the ethical use of AI (Participant E) and ensuring that students are aware of the repercussions associated with AI misuse (Participant F). These strategies emphasize the necessity of clear communication, continuous

education which includes AI literacy and academic integrity, and continuous ongoing monitoring to avert unethical practices.

Several participants noted the implementation of formal interventions, including the dispatch of letters to students (Participant C) and the facilitation of ethical AI engagement processes (Participant D). These practices demonstrate that institutions acknowledge the necessity of not only enforcing regulations but also educating students on the importance of ethical conduct in the use of AI during assessments.

Participants stressed the significance of clear guidelines and evidence of AI utilization in assessments (Participants A, B). This is consistent with the literature's emphasis on frameworks that guarantee transparency, accountability, and impartiality in the application of AI (Taylor et al., 2018; de Laat 2021). The literature emphasizes the necessity of explicit policies and ongoing monitoring to prevent AI misuse (Calo, 2018; Song, 2024), and the suggestions of participants for open discussions and continuous education on the responsible use of AI (Participants E and F) are consistent with this.

The need for defining explicit rules, ongoing education, and institutional support to guarantee the responsible application of AI in assessments is imperative. To promote ethical AI involvement, participants underlined the need for openness, responsibility, and proactive interventions, including official rules and honest dialogues. The results fit the body of current research, which emphasises the need of explicit laws, ongoing monitoring, and AI literacy in stopping misuse and guaranteeing fairness in evaluations.

Although several approaches have been used by institutions, including student alerts and organised participation programs, the success of these initiatives depends on continuous supervision and flexibility to meet new AI issues. The study emphasises how the careful use of AI calls for a balance between education and regulation to guarantee that students not only know ethical issues but also possess the ability to interact with AI suitably. Maintaining ethical standards in AI-assisted assessments ultimately depends on encouraging AI literacy and academic honesty by means of organised policies and honest debates.

5.3. Institutional policies and guidelines

The responses concerning institutional policies indicate that certain institutions possess established policies, including plagiarism guidelines (Participants B and F), whereas others are in the process of formulating specific frameworks for the application of AI in assessments (Participant D). The existence of Standard Operating Procedures (SOP's) and guidelines (Participant A) and the integration of matrices in assessments (Participant E) reflect an increasing institutional commitment to the incorporation of AI-specific policies.

The differing stages of policy development among institutions indicate that the integration of AI in education remains in progress. Some institutions have adopted automated systems, such as the robot system (Participant C), whereas others continue to utilise conventional plagiarism detection policies to tackle ethical issues associated with AI. The identified differences highlight the necessity for comprehensive policies centred on AI that can adapt to the evolving technological environment.

The literature emphasises the significance of institutional policies for the responsible integration of AI in assessments, which is reflected in the findings, which address the existence of policies such as AI-specific frameworks and plagiarism guidelines (Participants B, F, D). The literature underpins the importance of these policies in preserving academic integrity (Ardito, 2023). The integration of matrices in assessments (Participant E) and the use of the AI Traffic Model are consistent with the literature's discussion of the model's function in classifying the levels of AI involvement in assessments (Leeds University 2024).

The results highlight how some institutions have developed AI-specific rules while others are working on frameworks for AI inclusion in assessments. With some institutions depending on conventional plagiarism detection while others use AI-driven systems, this variety emphasises the continuous change of AI policy in education. The study underlines the need of thorough, flexible rules that fit technology developments and guarantee academic integrity in line with them. Emphasising the essential part institutional policies play in promoting ethical AI use and preserving fairness in assessments, the literature

supports this necessity. The adoption of frameworks like assessment matrices and the AI Traffic Model corresponds with best standards for organised AI integration. Nonetheless, the study implies that the institution has to keep improving its policies to handle new issues in the acceptance of AI. A balanced approach where AI is used wisely while preserving academic integrity requires constant policy development, institutional commitment, and technical change adaptation in the end.

5.4. Strategies for Advancing Ethical AI Implementation

Participants provided various recommendations for enhancing the ethical application of AIMAT Model in evaluations. The emphasis on informed choices for assessment models (Participant A) and developing rubrics aligned with matrices (Participant B) underscores the necessity for structured, transparent, and student-centred methodologies. Implementing practical-based assessments and triangulating assessments across modules, as suggested by Participant C, is recommended to reduce dependence on AI and enhance student engagement.

Participants suggested comprehensive training (Participant D) and scenario-based courses (Participant E) as effective methods for educating students on the ethical use of AI. These recommendations correspond with the overarching theme of flexibility and continuous adaptation to maintain the relevance and efficacy of AI policies. Participant F indicated no suggestions for improvement; however, the overall consensus highlights the necessity of refining and expanding support systems for ethical AI utilisation.

The literature's discussion on AI's potential to improve learning through personalised instruction and improved assessment design is directly reflected in the suggestions of participants for rubrics that are aligned with AI matrices (Participant B) and practical-based assessments (Participant C) (Mittal, 2023). The literature's emphasis on ethical frameworks and the significance of educating students on responsible AI use is consistent with the focus on student-centered strategies, such as scenario-based courses (Participant E) (Scantamburlo et al., 2020). Dewey's principles of integration and experience are reflected in the rubrics that encourage student engagement and the

recommendations for practical learning. Dewey was a proponent of education that prioritised hands-on learning and integrated knowledge across disciplines (Kai, 2023).

The results suggest that promoting ethical AI integration in assessments necessitates organised, transparent, and student-focused methodologies. Participants emphasised the significance of informed decision-making in assessment frameworks, creating AI-aligned rubrics, and implementing practical assessments to mitigate excessive dependence on AI. Moreover, training programs and scenario-based courses were identified as crucial techniques for cultivating AI literacy and ethical consciousness among students.

The literature supports these ideas, highlighting the importance of ethical frameworks, student engagement, and adaptive learning approaches. The integration of AI-specific rubrics and practical evaluations embodies Dewey’s concepts of experiential learning, underscoring the necessity for a cohesive approach to AI ethics teaching. The study indicates that ongoing enhancement of AI policy, institutional backing, and adaptable tactics are essential for AI’s responsible and practical application in education.

5.5. Best Practices and Successful Interventions

Best practices identified from implementing the AIMAT Model include enhancing student engagement and AI exploration (Participant B) and promoting transparency in AI disclosure (Participant F). Participants indicated that the Model facilitated improved self-expression among students (Participant A) and enhanced their awareness of ethical issues (Participant C).

Documenting AI usage (Participant D) has demonstrated effectiveness as an intervention, enhancing accountability and transparency. This practice monitors students’ interactions with AI tools, preventing misuse and promoting ethical behaviour. The variation in responses, exemplified by Participant E’s minimal interventions, indicates that although the Model proves effective for many, there remain areas where its impact has not been fully realised.

The literature emphasises the importance of sharing best practices in assessments to enhance learning outcomes, engagement, and ethical behaviour (Pinto et al., 2020; Isnaini et al., 2021), which is reflected in the emphasis on enhancing student engagement and transparency in AI disclosure (Participant B, F). The literature's description of the AI Traffic Light Model and its function in promoting accountability and ethical behaviour in using AI is consistent with the documentation of AI usage as a successful intervention (Participant D) (Leeds University 2024). While ethical practices are increasing, the AIMAT Model (Participant E) faces challenges, as evident in the diverse responses. The latter elucidates literature's emphasis on the necessity of responsible AI use frameworks and continuous refinement (de Laat, 2021; Astobiza et al., 2022).

The study underscores the efficacy of the AIMAT Model in fostering ethical AI utilisation by implementing best practices, including student involvement, AI exploration, and transparency in AI disclosure. The model promotes students' self-expression and ethical awareness, while the documentation of AI usage is crucial to guarantee accountability and avert misuse. Nonetheless, the diverse effects observed among participants indicate that, although the model proves advantageous, additional refinement and adaptation are essential to enhance its effectiveness.

The results are consistent with studies in the literature review on effective methods for incorporating AI in educational settings, emphasising the significance of transparency, accountability, and ongoing enhancement. The findings highlight the necessity for organisations to enhance AI policies, promote knowledge exchange, and adopt flexible strategies to guarantee the ethical application of AI in assessments.

6. Limitations

While this study provided valuable insights, from the lecturers' perspective, it is imperative to acknowledge the limitations and constraints that influenced the scope of the study. To uphold the integrity and transparency of the study, it must be stated that data was only collected from one campus in the Western Cape of South Africa. The population consisted of six lecturers across five

disciplines, and therefore, this study cannot be generalised to the larger population. We acknowledge the limited target group that did not enable us to capture diverse perspectives and practices from various schools. Resultantly, the analysis may not fully reflect the complexities and praxis inherent in the different schools. Due to time constraints, data were collected during an assessment period that could have influenced the responses of participants and their willingness to participate in the study.

7. Recommendations

The study offers recommendations from the lecturers' perspectives and experiences, aimed at guiding the institution in enhancing the implementation of the AIMAT Model.

Recommendations to the institution:

Students must be thoroughly informed of the consequences of using AI unethically and irresponsibly, especially if it is prohibited according to the AI Matrix. Students who do not use AI ethically must be awarded a 0 mark for assessments. Students must be provided with a set of AI guidelines that must be adhered to when doing assessments, specifically guiding them towards the ethical use of AI. AI is still unfamiliar territory for many students; hence, lecturers should offer a range of tools to use in assessments, giving them the freedom to select one that suits their comfort level.

It is recommended that the institution establish an ethics committee to oversee the use of AI in assessments. This committee should also review AI-related policies, handle grievances, and ensure compliance with ethical standards. Policies and guidelines must include principles of fairness, accountability, and transparency, in accordance with National Frameworks. Administrators must keep records of student AI usage updated and follow up if there are transgressions in student usage. However, to execute the latter, administrators must ensure that transgressions are actioned within the broader institutional policy framework.

Recommendations for the institution regarding lecturer support:

As indicated by the lecturers, the institution must share more detailed information regarding the ethical and responsible use of the Traffic Light Model (TLM) and AI utilisation in assessments with lecturers and students. It is recommended that lecturers, students and administrators undergo comprehensive training on utilising the AIMAT model effectively through a scenario-based course that thoroughly explains and applies the AI Matrix. The training should also address the technological aspects of the Model's integration and AI, interpreting data, and making informed decisions based on AI insights and assessment usage. Furthermore, lecturers must be trained to develop a rubric aligned with the AI Matrix to clarify student limitations and implications. Lecturers also indicated that they need to be provided with tools to assess the ethical use of AI effectively.

Recommendations for further studies

We recommend that more research be done on implementing AI models in assessments. Further research should include multiple institutions, both private and public, in South Africa. Acknowledging the limitations of the study, we recommend that comparative studies be done across schools within the institution to probe deeper into the subject-specific requirements associated with the implementation of the AIMAT Model.

8. Conclusion

The AIMAT Model presents a viable framework for enhancing ethical AI application in student assessments; however, its effectiveness relies on clearly articulated policies, AI literacy, and sustained institutional support. Participants identified several essential strategies for enhancing the Model's effectiveness, including comprehensive scenario-based training, training for setting clear rubrics and tools to assess AI's ethical and responsible use. The Model has demonstrated effectiveness in enhancing awareness, accountability, and honesty among students; however, ongoing adaptation and refinement are essential to guarantee its sustained impact. Even though the study did not uncover a significant array of best practices, we garnered

valuable insights and critical knowledge regarding the interplay between structured guidelines and AI-guided assessments.

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