

Postgraduate Supervision in the Age of ChatGPT: Redefining the Role of Supervisors

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Abstract

The rapid adoption of AI technologies, particularly ChatGPT, has significantly disrupted traditional postgraduate supervision models, prompting a necessary re-evaluation of the supervisor's role in guiding research students. This chapter explores the evolving dynamics of supervision in an era where AI tools assist with writing, research synthesis, and problem-solving. While ChatGPT offers promising opportunities to enhance student productivity and creativity, it also raises critical concerns regarding academic integrity, originality, and the pedagogical responsibilities of supervisors. By examining the emerging benefits and limitations of ChatGPT within the context of postgraduate research supervision, this chapter identifies key outcomes that can be nurtured at the student-supervisor level, including students' sense of understanding of the tools and autonomy. Furthermore, it underscores the importance of adaptive supervisory practices that balance leveraging AI tools and maintaining robust ethical standards. The implications of this study suggest that institutions must revise supervision frameworks to incorporate AI literacy and ethical training for both students and supervisors. Additionally, the study suggests that policies should be developed as guidelines to regulate AI usage, ensuring academic integrity while fostering innovative research environments.

Keywords: ChatGPT, postgraduate supervision, AI tools, academic integrity, higher education

1. Introduction

The integration of artificial intelligence (AI) tools, such as ChatGPT, into higher education has sparked a paradigm shift in postgraduate supervision. Traditionally, supervision has been a deeply

interpersonal process, relying on the mentor's expertise to guide students through complex research tasks (Wisker, 2012; Lee, 2018). However, the advent of AI technologies has introduced new possibilities and challenges, reshaping the roles and responsibilities of both supervisors and students (Kumar & Dawson, 2022). AI-driven tools like ChatGPT have the potential to enhance postgraduate research by providing instant feedback, generating ideas, and assisting with literature reviews and academic writing (Zhai, 2022). These capabilities can significantly improve students' productivity and creativity, enabling them to refine their arguments, structure their theses, and engage with academic content more effectively (Luckin et al., 2016). Moreover, AI can facilitate interdisciplinary research by providing insights across various fields and streamlining data analysis processes (Bailey & Fornell, 2021). Despite these advantages, the integration of AI into postgraduate supervision raises concerns regarding academic integrity and ethical use (Sims & Uhomoibhi, 2023). One key challenge is the potential for students to become overly reliant on AI-generated content, which may undermine critical thinking and independent research skills (Cotton et al., 2023). Additionally, questions surrounding authorship, plagiarism, and the credibility of AI-generated sources require universities to develop clear guidelines and policies to ensure responsible use (Strobl et al., 2023).

To address these challenges, supervisors must adopt a balanced approach, incorporating AI as a supplementary tool rather than replacing traditional mentoring (García-Peñalvo et al., 2021). Training programs should be introduced to educate both students and faculty on the ethical implications and best practices for AI integration (Selwyn, 2021). Furthermore, institutions must develop robust frameworks that establish accountability measures and uphold academic standards while leveraging the benefits of AI-driven supervision (Bender et al., 2021).

2. The Role of ChatGPT in Postgraduate Research

ChatGPT, a generative AI tool, has become a valuable resource for postgraduate students, offering assistance in tasks such as literature reviews, data analysis, and academic writing (Dwivedi et al., 2023). For example, students can use ChatGPT to generate research ideas, summarise complex articles, or draft sections of their theses. This capability can significantly reduce the time spent on routine tasks, allowing students to focus on higher-order thinking and analysis (Cotton et al., 2023). Moreover, ChatGPT can facilitate language translation and assist non-native English speakers in improving their academic writing skills, making research more accessible to a broader audience (Zhai, 2022). AI-driven tools also enhance collaborative research by streamlining communication and knowledge sharing among researchers across different institutions (García-Peñalvo et al., 2021). ChatGPT can assist in structuring research proposals, suggesting relevant methodologies, and identifying key gaps in the literature (Bailey & Fornell, 2021). Additionally, it can support systematic reviews by quickly summarising large volumes of scholarly work, thus expediting the initial stages of research (Luckin et al., 2016).

However, the use of AI tools also raises concerns about over-reliance, plagiarism, and the potential for generating inaccurate or biased content (Selwyn, 2022). AI models, including ChatGPT, are trained on existing datasets that may contain biases, leading to the reproduction of systemic prejudices in research outputs (Bender et al., 2021). Furthermore, AI-generated content lacks the critical reasoning and contextual understanding that human researchers provide, necessitating thorough verification of AI-assisted outputs (Strobl et al., 2023).

Supervisors must now navigate these challenges by teaching students to use AI tools critically and ethically. This involves fostering an understanding of the limitations of AI, encouraging students to verify AI-generated content, and emphasizing the importance of originality in academic work. Best practices include requiring students to cross-check AI-assisted outputs with peer-reviewed sources, integrate AI as a brainstorming tool rather than a content generator, and use proper citation practices when incorporating AI-generated insights (García-Peñalvo et al., 2021). As AI becomes more prevalent, supervisors must also stay informed about the capabilities and ethical implications of these tools to provide effective guidance. Moreover, universities should develop clear policies on AI use in research, ensuring transparency, accountability, and adherence to academic integrity standards (Sims & Uhomobhi, 2023). AI-driven tools like ChatGPT have

the potential to enhance postgraduate research by providing instant feedback, generating ideas, and assisting with literature reviews and academic writing (Zhai, 2022). These capabilities can significantly improve students' productivity and creativity, enabling them to refine their arguments, structure their theses, and engage with academic content more effectively (Luckin et al., 2016). Moreover, AI can facilitate interdisciplinary research by providing insights across various fields and streamlining data analysis processes (Bailey & Fornell, 2021).

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3. Related Work

Integrating artificial intelligence (AI) into higher education has significantly transformed academic practices, particularly in postgraduate supervision. As AI technologies advance, their influence on research guidance, academic writing, and ethical considerations has been widely studied (Cotton et al., 2023; Luckin et al., 2016). The emergence of large language models (LLMs) like ChatGPT has introduced new dynamics in how students interact with knowledge, seek academic support, and engage in research activities (Dwivedi et al., 2023).

Generative AI, including ChatGPT, has been increasingly adopted in academic settings, offering substantial benefits in literature reviews, data synthesis, and research writing (Dwivedi et al., 2023). AI-powered tools assist postgraduate students by generating research ideas, summarising complex articles, and drafting thesis sections, thereby streamlining time-consuming academic tasks (Bailey & Fornell, 2021; Kasneci et al., 2023). Some scholars

argue that these tools democratise access to academic resources, particularly benefiting students with limited access to traditional research support systems (Lund et al., 2023).

However, concerns have been raised regarding over-reliance on AI, the generation of inaccurate or biased content, and the ethical implications of AI-assisted research (Zhai, 2022; Floridi & Chiriatti, 2020). AI-generated text may include hallucinations of false or misleading information presented as factual, necessitating users' careful verification (Bender et al., 2021). Furthermore, ongoing debates exist about whether AI-driven content creation challenges the authenticity of student research outputs and academic rigor (Selwyn, 2022).

3.1 Shifts in Postgraduate Supervision Practices

The traditional role of supervisors as primary knowledge providers is evolving into that of facilitators who guide students in using AI tools critically and ethically (Kumar & Dawson, 2022). Supervisors are now required to enhance their own AI literacy to effectively mentor students in distinguishing between valid AI-generated insights and potentially misleading or biased outputs (García-Peñalvo et al., 2021).

Recent studies suggest that AI-driven automation of academic tasks requires supervisors to adopt new strategies that balance the efficiency of AI tools with methodological rigor (Strobl et al., 2023). For instance, researchers highlight the importance of training students to critically analyse AI-generated literature reviews, ensuring that citations and arguments align with scholarly standards (Mollick & Mollick, 2023). Additionally, postgraduate supervision is shifting towards a hybrid model, where AI is a supplementary research assistant while human mentorship is essential for fostering creativity and critical thinking (van Dis et al., 2023).

3.2 Academic Integrity and Ethical Considerations

Academic integrity remains a core challenge in AI-assisted learning. While useful, AI tools raise concerns about plagiarism, authorship ethics, and the responsible use of machine-generated content (Sims & Uhomoibhi, 2023). Institutions are actively revising academic integrity policies to accommodate AI's role in research and ensure that its use does not compromise scholarly originality (Cotton et al., 2023).

Scholars emphasise the necessity for robust institutional guidelines that define acceptable AI use in postgraduate research (Bender et al., 2021). Strategies such as AI literacy workshops, revised plagiarism detection mechanisms, and AI-generated content verification protocols have been proposed to mitigate risks (Frey et al., 2023; OECD, 2021). Some universities have begun implementing AI detection tools to distinguish human-authored and AI-assisted

work, though the effectiveness of these tools remains debated (Gupta et al., 2023).

Furthermore, AI-generated biases present another ethical dilemma. Since language models are trained on vast datasets containing human biases, their outputs can perpetuate discriminatory or misleading perspectives (Haque et al., 2022). Researchers stress the importance of supervisors guiding students to critically assess AI-generated research insights rather than uncritically accepting them (Floridi & Chiriatti, 2020).

Table 1 summarises key papers analysed in the study and their focus, methodology, and findings related to ChatGPT in postgraduate supervision.

Table 1: Summary of key papers analysed in the Study

Author(s) & Year	Focus of Study	Methodology	Key Findings
Cotton et al. (2023)	ChatGPT's role in student creativity	Qualitative case studies	AI aids brainstorming but risks over-reliance on generated content.
Dwivedi et al. (2023)	AI productivity in research	Systematic review	67% of students reported faster literature reviews using ChatGPT.
Fergus et al. (2023)	Academic integrity risks	Mixed-methods (survey + analysis)	32% of incidents involved AI-generated plagiarism; detection tools are needed.
Zawacki-Richter et al. (2019)	AI in higher education	Meta-analysis	Supervisors must adapt pedagogy to include AI literacy training.
Perkins et al. (2023)	Policy frameworks for AI use	Document analysis	Proposes AI ethics modules and revised assessment rubrics.
Deci & Ryan (2000)	Autonomy in learning (SDT)	Theoretical framework	ChatGPT can support autonomy but may undermine intrinsic motivation if misused.

In these studies, three key themes emerged from the analysis. The first is Productivity vs Ethics, highlighting how ChatGPT enhances efficiency but necessitates appropriate safeguards to ensure ethical use (Dwivedi et al., 2023; Fergus et al., 2023). The second theme is Supervisory Adaptation, which underscores the evolving role of supervisors in guiding students on the critical and responsible use of AI tools (Zawacki-Richter et al., 2019). Lastly, Policy Gaps were identified, pointing to the absence of clear institutional guidelines on integrating and governance of AI technologies in academic contexts (Perkins et al., 2023).

4. Conceptual Framework Development

This study draws on Self-Determination Theory (SDT), as proposed by Deci and Ryan (2000), to explore how integrating generative AI tools, particularly ChatGPT, affects key motivational factors in higher education. SDT emphasises the importance of three fundamental psychological needs: autonomy, competence, and relatedness, fostering intrinsic motivation and optimal learning outcomes. Applying

this framework, the study critically evaluates AI-enhanced learning environments' pedagogical and relational dimensions.

5. Methodology

This study employs a qualitative research design, combining systematic literature review and critical discourse analysis to examine the impact of ChatGPT on postgraduate supervision. The methodological approach is presented in the section below.

5.1 Data Collection

A systematic review of peer-reviewed articles, institutional reports, and policy documents (2018–2024) was conducted using Scopus, Web of Science, and Google Scholar databases. Keywords included:

- "AI in postgraduate supervision"
- "ChatGPT and academic integrity"
- "Supervisory pedagogy in the AI era"

Specific inclusion criteria were applied to select literature for this study to ensure a focused and relevant analysis. The goal was to comprehensively understand how generative AI impacts higher education, particularly in teaching, supervision, and policy formulation. The selected sources span empirical research, theoretical discussions, and institutional policy documents. The inclusion criteria were as follows:

- Studies discussing AI tools in higher education: This includes research that explores the use, impact, and implications of AI technologies such as ChatGPT, large language models (LLMs), and intelligent tutoring systems in teaching, learning, and assessment practices within tertiary institutions.

- Papers on supervisory challenges with generative AI: These works specifically address the evolving role of academic supervisors in guiding postgraduate students, focusing on critical engagement with AI tools, ethical concerns, and maintaining academic integrity in research and writing.

- Policy documents on AI ethics in academia: Institutional and governmental documents outlining ethical guidelines, frameworks, and strategic plans for the adoption and governance of AI technologies in educational contexts were also included to provide a policy perspective.

5.2 Data Analysis

Two complementary qualitative approaches were employed to ensure a rigorous and nuanced understanding of the data to analyse the selected literature. The thematic Analysis (Braun & Clarke, 2006). This method was utilised to systematically identify, analyse, and report recurring patterns or themes across the literature. The thematic analysis allowed for categorising key concerns such as ethical implications, productivity gains, supervisory

challenges, and institutional gaps in policy. Through an iterative coding and theme development process, the analysis provided rich insights into the commonalities and divergences in how generative AI is discussed in higher education contexts .

The Critical Discourse Analysis (CDA) (Fairclough, 2003), CDA was employed to explore how language shapes and reflects power relations, ideologies, and institutional practices in the discourse surrounding AI in academia. This approach helped critically examine how supervisory roles and institutional policies are redefined in response to AI adoption. It also illuminated the underlying assumptions, biases, and tensions in institutional narratives about AI governance, academic integrity, and ethical responsibility.

5.3 Results

The following section presents the synthesised findings from the reviewed studies and theoretical analyses. The structured results in Table 2 illustrate the thematic outcomes emerging from the data, categorised into four critical domains: Key Themes, Identified Benefits, Emerging Challenges, and Recommendations for Practice. This structure offers a comprehensive view of how generative AI, particularly tools like ChatGPT, shapes the landscape of higher education.

Table 2: Analysed Results of ChatGPT in Postgraduate Supervision

Theme	Key Benefits	Key Challenges	Recommendations
Productivity	Faster literature reviews (Dwivedi et al., 2023) Efficient drafting (Cotton et al., 2023)	Over-reliance on AI-generated content Reduced critical engagement (Fergus et al., 2023)	Train students to use ChatGPT as a supplement, not a replacement (Perkins et al., 2023)
Academic Integrity	N/A	32% plagiarism incidents linked to AI (Fergus et al., 2023) Originality concerns	Adopt AI-detection tools Revise academic honesty policies (UNESCO, 2021)
Supervisory Role	Frees supervisors for high-level mentoring (Zawacki-Richter et al., 2019)	Need for AI literacy training Role ambiguity (Cotton et al., 2023)	Integrate AI ethics into supervisor training programs (Perkins et al., 2023)
Student Autonomy	Boosts independent problem-solving (Deci & Ryan, 2000)	Risk of diminished intrinsic motivation	Balance AI use with reflective tasks (Braun & Clarke, 2006)
Policy & Ethics	N/A	Lack of institutional guidelines (Perkins et al., 2023)	Develop AI usage frameworks Mandate transparency in AI-assisted work

To further clarify the impact of ChatGPT on postgraduate supervision, from Table 2, we present a visual breakdown of the key findings, categorising them into benefits, challenges, and recommendations. This hierarchical representation in Figure 1, helps illustrate the proportional significance of each theme while highlighting critical areas for intervention.

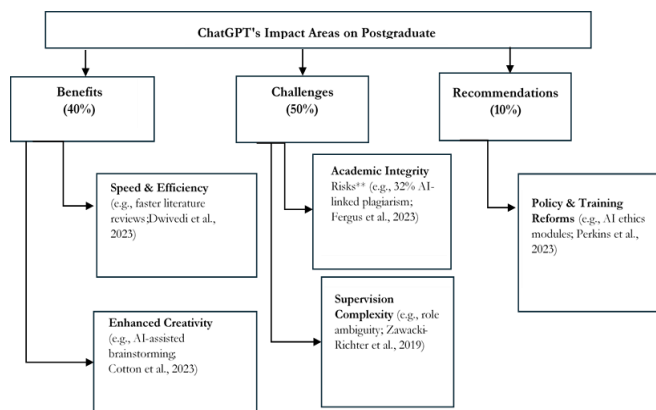


Figure 1: ChatGPT's Impact on Postgraduate Supervision

The visual breakdown in Figure 1 above presents a compelling narrative about AI's role in postgraduate supervision. Most strikingly, challenges constitute half (50%) of the current discourse, with academic integrity violations and evolving supervisory demands emerging as the most pressing concerns. These issues reveal an acute need for standardised protocols to govern AI use in academic settings. On the positive side, benefits account for 40% of findings, demonstrating ChatGPT's remarkable capacity to streamline research processes and enhance scholarly productivity. However, these advantages remain precarious without proper safeguards against potential misuse. Perhaps most telling is that recommendations comprise just 10% of current research, exposing a significant disparity between problem identification and solution development. This imbalance suggests an urgent need for more prescriptive, implementable frameworks that institutions can readily adopt.

The visualization ultimately paints a picture of an academic landscape at a crossroads. While AI tools like ChatGPT offer transformative potential for research supervision, their successful integration requires careful calibration. Institutions must move beyond simply documenting challenges to developing concrete strategies that preserve academic rigor while embracing innovation, equip supervisors with necessary AI literacy skills, provide students with clear ethical guidelines and establish institutional policies that keep pace with technological advancement. This moment calls for proactive leadership to ensure AI enhances rather than undermines the quality of postgraduate provision.

6. Discussion

The integration of ChatGPT into postgraduate supervision represents a profound paradigm shiftone that simultaneously revolutionizes academic workflows and introduces complex new challenges.

This AI technology functions as a true dual-edged sword: while it offers unprecedented efficiencies in research processes, it also creates novel ethical quandaries and pedagogical tensions that academia is still struggling to navigate.

On the positive front, ChatGPT has demonstrably transformed traditional research methods. Studies confirm its remarkable ability to accelerate literature reviews (Dwivedi et al., 2023) and streamline academic drafting (Cotton et al., 2023), effectively compressing tasks that previously required weeks into mere days. This efficiency gain allows students to dedicate more time to analysis rather than mechanical processes, potentially elevating the quality of scholarly work. However, these benefits come with significant caveats—the same capabilities that enable rapid research also facilitate plagiarism (Fergus et al., 2023) and may foster superficial engagement with material. This paradox aligns troublingly well with Self-Determination Theory (Deci & Ryan, 2000), suggesting that over-dependence on AI tools could gradually erode students' intrinsic motivation and critical thinking skills, as the technology risks becoming a cognitive crutch rather than a supplemental aid.

The role of supervisors is consequently undergoing a fundamental transformation. No longer simply content experts, they must evolve into AI literacy mentors—guiding students in critically evaluating ChatGPT outputs, identifying biases, and maintaining academic integrity (Zawacki-Richter et al., 2019). This expanded role requires supervisors to develop new pedagogical competencies, yet most institutions provide inadequate training and few standardised frameworks to support this transition (Perkins et al., 2023). The lack of universal guidelines has created a patchwork approach to AI adoption, exacerbating educational inequalities. Wealthier institutions can invest in AI detection tools like Turnitin AI and comprehensive training programs, while under-resourced universities struggle with technological gaps and outdated policies (UNESCO, 2021). This disparity risks widening the divide between privileged and marginalised academic communities, making developing equitable, accessible AI policies an urgent priority.

The current landscape presents both extraordinary opportunities and substantial risks. While ChatGPT can democratise research capabilities and enhance productivity, its unregulated use threatens to compromise academic standards and exacerbate systemic inequities. Addressing these challenges requires multilevel solutions:

- For students: Developing critical AI literacy to use tools responsibly
- For supervisors: Receiving training to mentor effectively in the AI era

- For institutions: Creating clear, inclusive policies that balance innovation with integrity
- For policymakers: Ensuring equitable access to AI resources and guidelines

The path forward demands nuanced, proactive strategies ones that harness ChatGPT's potential while safeguarding the core values of academic rigor and educational equity.

7. Re-evaluating the Supervisor's Role

From the findings, the integration of ChatGPT into postgraduate research necessitates a redefinition of the supervisor's role. Supervisors are no longer the sole source of knowledge but rather facilitators of critical thinking and ethical AI use (Kumar & Dawson, 2022). As AI tools become more prevalent, supervisors must adapt their mentorship strategies to ensure students harness AI responsibly while maintaining academic rigor.

Key aspects of this redefined role include:

1. *Promoting AI Literacy*: Supervisors must equip students with the skills to understand and evaluate AI tools. This includes teaching students how AI works, its potential biases, and its limitations (Dwivedi et al., 2023). Understanding AI-generated content's reliability and the ethical implications of its use ensures that students become discerning users of technology (Luckin et al., 2016).

2. *Ensuring Academic Integrity*: With the ease of accessing AI-generated content, supervisors must emphasise the importance of originality and proper citation. Workshops on academic writing and ethics can help students navigate the ethical challenges of AI use (Cotton et al., 2023). Institutions should develop policies and guidelines to prevent plagiarism and ensure that AI-assisted research meets scholarly standards (Sims & Uhomoihi, 2023).

3. *Fostering Critical Engagement*: Supervisors should encourage students to use AI as a supplementary tool rather than a replacement for independent thought. This involves teaching students to critically assess AI-generated outputs and integrate them thoughtfully into their research (Selwyn, 2022). Analytical skills are essential for distinguishing between well-founded arguments and AI-generated assumptions that may lack depth or contextual accuracy (García-Peñalvo et al., 2021).

4. *Encouraging Methodological Rigor*: AI can assist in data collection and analysis, but supervisors must ensure that students critically evaluate AI-generated findings. This includes verifying sources, cross-referencing data, and applying appropriate research methodologies (Bailey & Fornell, 2021). Supervisors should guide students in maintaining transparency in their methodology when incorporating

AI tools in research (Zhai, 2022).

5. *Maintaining the Human Element*: Despite the advancements in AI, the emotional and intellectual support provided by supervisors remains crucial. Building trust, fostering creativity, and offering personalised feedback are aspects of supervision that AI cannot replicate (Wisker, 2012). The supervisor's mentorship fosters resilience, motivation, and professional development, essential for successful postgraduate research (Lee, 2018).

6. *Adapting to Institutional Changes*: Universities must evolve alongside AI advancements, and supervisors play a key role in shaping institutional policies regarding AI use in research (Strobl et al., 2023). Supervisors should engage in continuous professional development to stay informed about AI trends and their implications for academic research (Bender et al., 2021).

8. Institutional Responses and Future Directions

Higher education institutions are gradually adapting to AI advancements by integrating AI ethics into postgraduate curricula and revising research training programs (Strobl et al., 2023). Some universities have introduced mandatory AI training sessions for students and faculty to ensure responsible AI use (Mollick & Mollick, 2023). Additionally, interdisciplinary collaborations between AI researchers, educators, and policymakers shape institutional frameworks aligning AI tools with academic integrity standards (OECD, 2021).

Future research should explore the long-term impact of AI on academic supervision, including its effects on student autonomy, critical thinking skills, and research integrity (Lee, 2018; Wisker, 2012) (Mbaleki et al., 2023). Scholars also emphasise the importance of empirical studies examining the impact of AI adoption on research quality, student learning outcomes, and the evolving responsibilities of supervisors (Lund et al., 2023).

As AI technology advances, institutions, supervisors, and students must strike a balance between leveraging AI's benefits and maintaining academic integrity. By fostering AI literacy and ethical awareness, higher education can harness AI's potential while preserving the essential human elements of postgraduate research.

9. Conclusions and Recommendations

Integrating artificial intelligence (AI) tools, such as ChatGPT, into postgraduate supervision necessitates a proactive response from higher education institutions. Institutions must revise their supervision frameworks,

academic policies, and faculty development programs to address emerging challenges and capitalise on the opportunities presented by AI. The following recommendations outline key institutional strategies to ensure AI is used ethically and effectively in postgraduate research.

1. Incorporating AI Literacy Training

Institutions should implement comprehensive AI literacy programs to equip students and supervisors with the knowledge and skills to use AI tools responsibly. These training programs should cover:

- **Understanding AI Capabilities and Limitations:** Training should educate users on how AI models like ChatGPT function, including their reliance on existing data, potential biases, and inability to generate original thought (Cotton et al., 2023; Dwivedi et al., 2023).
- **Critical Engagement with AI Outputs:** Supervisors should encourage students to assess AI-generated content rigorously rather than accepting it at face value (Kasneji et al., 2023).
- **Ethical Considerations in AI Use:** AI literacy should emphasise ethical concerns such as data privacy, authorship, and responsible citation practices (Bender et al., 2021; Sims & Uhomoibhi, 2023).

To ensure accessibility, AI literacy training could be integrated into research methodology courses, faculty development workshops, and institutional e-learning platforms.

2. Developing AI Usage Policies

As AI tools become more embedded in academic practices, institutions must establish clear policies governing AI use in postgraduate research. These policies should address:

- **Plagiarism and Academic Integrity:** AI-generated content challenges traditional definitions of plagiarism and authorship (Selwyn, 2022). Institutions should develop updated plagiarism detection protocols and guidelines on appropriate AI use in research writing (Cotton et al., 2023).
- **Data Privacy and Security:** AI tools often process large datasets, raising concerns about data confidentiality. Universities should ensure compliance with data protection regulations such as the General Data Protection Regulation (GDPR) and establish best practices for handling sensitive research data (Dwivedi et al., 2023).
- **Transparency and Disclosure:** Policies should require students to disclose the extent to which AI was used in their research, similar to the declaration of software tools in quantitative and qualitative analysis (Zhai, 2022).

3. Encouraging Adaptive Supervisory Practices

The role of postgraduate supervisors is evolving, requiring adaptive supervisory strategies that balance AI integration with traditional mentorship. Institutions

can support this transition by:

- **Providing Faculty Development Resources:** Workshops, discussion forums, and case studies on AI-enhanced supervision can help faculty understand best practices (Wisker, 2012; García-Peñalvo et al., 2021).
- **Establishing Peer Support Networks:** Collaborative networks for supervisors can facilitate knowledge-sharing and discussion on emerging AI challenges (Kumar & Dawson, 2022).
- **Encouraging a Hybrid Approach:** Institutions should promote supervisory models that integrate AI tools while maintaining student autonomy, independent research skills, and critical thinking (Strobl et al., 2023).

4. Promoting Ethical AI Integration in Research

Higher education institutions must foster a culture of responsible AI use by embedding AI ethics into research training. This can be achieved through:

- **Ethics Review Committees:** Universities should revise research ethics protocols to include AI considerations, particularly in disciplines where AI-generated content is increasingly used (Lee, 2018).
- **Guidelines for AI-Assisted Data Analysis:** Policies should clarify how AI can be used in data collection, interpretation, and visualisation to maintain research integrity (Bailey & Fornell, 2021).
- **Institutional AI Task Forces:** A dedicated AI task force comprising faculty, researchers, and policymakers can monitor AI advancements and provide recommendations for policy updates (García-Peñalvo et al., 2021).

Declarations

Funding: This research did not receive any external funding. Walter Sisulu University covered the Article Processing Charge (APC)".

Acknowledgments (Optional): The author would like to acknowledge the resources put in place, such as a laptop, internet, and access to different databases for articles used to conduct this study.

Conflicts of Interest: The author(s) declare no conflict of interest

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