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A Participatory Approach to Develop Ethical Guidelines for Generative Artificial Intelligence

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ABSTRACT

Objective: To explore the perceptions of supervisors and postgraduate students on the ethical use of Artificial Intelligence (AI) in thesis writing.

Study Design: Qualitative Exploratory Study.

Place and Duration of Study: Riphah International University Rawalpindi, Pakistan from Jan to Jun 2024.

Methodology: Focus group discussions were employed to gather data from 20 participants, consisting of university supervisors and postgraduate students. Thematic analysis was performed using ATLAS.ti 9 to identify recurring themes related to the ethical use of AI in thesis writing.

Results: Five key themes emerged from the analysis: transparency, academic integrity, personal development, data privacy, and supervision. Both students and supervisors expressed concerns about the ethical use of AI, particularly around issues like plagiarism, over-reliance, and data security. Supervisors also emphasized the need for institutional policies to regulate AI usage, while students perceived AI as a tool for enhancing their academic skills.

Conclusion: There is a critical need for comprehensive ethical guidelines to govern the use of AI in academic research, particularly in thesis writing. Engagement of key stakeholder including academic supervisors, students, and institutional authorities in the formulation of these guidelines provided a balanced approach in identifying the benefits of AI while addressing concerns related to academic integrity, transparency, and data privacy.

Keywords: Artificial Intelligence, Ethical Guidelines, Supervisors' Perceptions, Students' Perceptions

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INTRODUCTION

Advancements in artificial intelligence technology have drastically transformed the educational landscape.[1] This includes the use of various chat bots for crafting academic write ups including academic assignments, thesis and research articles. Although the use of chat bots, language models, citation generators have reduced the workload on students and provided an efficient platform for enhanced productivity, improved quality of writing and reduced time for literature search but their use has raised questions on authenticity of work and competence of students.[2]

The growing reliance of students on AI has raised concerns over the originality, fairness and ability of the students to submit their assignments without proper understanding. The International Committee of Medical Journal Editors (ICMJE) and Committee of Publication Ethics (COPE) recognize and strictly regulate the use of AI in scholarly publication.[3,4] Excessive dependence on AI challenges the academic integrity and fundamental principles of honest scholarship. The ease associated with use of bots to generate ideas, guide the process of data generation and analysis challenges the credibility of the produced work. In addition to this, ownership of intellectual contribution has become questionable. This has resulted in flawed evaluation of one's ability in relation to fellow students, as use of the technology creates grey areas between original academic output versus automated assistance.[5] This warrants exploration of ethical practices in usage of artificial intelligence in academic context. Advancement in technology contributes to the academic perspectives but overuse of the same technology may hamper personal development of the student. To strike a balance between acceptable and unacceptable use of AI, educational institutions must devise proper guidelines, thorough research is needed which takes into account the perspectives of the students as well as their supervisors to maintain a balance between AI's potentials and pitfalls.[6]

This study explored the perspectives of academic supervisors and post graduate students on the ethical use of artificial intelligence in thesis writing. Finding a balance between leveraging AI capabilities and

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ensuring that academic work remains original, credible, and ethically sound is challenging yet it is need of the day. Perspectives from either side of writing are necessary to provide insight which in turn can guide the development of guidelines and ethical practices.

METHODOLOGY

This qualitative study was conducted at Riphah International University Rawalpindi, Pakistan, between January and June 2024 after obtaining approval from Institutional Review Committee (vide Riphah/IRC/24/1018).

Inclusion Criteria: Academic supervisors of either gender and any age group, supervising MHPE thesis and post graduate students who used AI in their assignments and thesis work were included in the study.

Exclusion criteria: Supervisors with less than 2 years' experience and undergraduate students were excluded.

Two focus group discussions were organized: one had 8 academic supervisors, while the other had 12 post graduate students. The study participants were a diverse group including supervisors from medical and dental education as well as computer science. The study design was grounded in principals of Participatory Action Research (PAR) where study participants are co-researchers to directly address relevant academic issues and experiences. The focus group was conducted via a Zoom meet ensuring convenient participation from all participants. Purposive sampling was done until saturation of data took place.

The research was carried out in three phases. During the first phase a structured open-ended questionnaire was formulated by researchers, corroborated by key stakeholders, including two academic supervisors and 3 postgraduate (MHPE) scholars, and was validated by 3 subject experts. The questionnaire included items pertaining to the familiarity of participants with AI tools, their perceptions on the benefits and challenges of AI in thesis writing, academic integrity and views on the ethical implications.

In the second phase the questions focus group discussion was carried out through Zoom meet with 8 academic supervisors. The third phase of study included focus group discussion with 12 post graduate students. Each focus group session was recorded, transcribed, and analyzed. The qualitative data was analyzed using thematic analysis with the assistance of Atlas.ti software. Thematic analysis was done to identify recurring themes and patterns in the participants' responses. Next, codes were generated by reading and re-reading the transcripts, axial coding included of key phrases, and grouping these codes into broader categories. The themes that emerged were transparency, academic integrity, personal development, data privacy, and supervision.

RESULTS

Based on the findings in the study, summarized themes, subthemes, and number of codes are illustrated in the Table-I. The key perceptions from both supervisors and students regarding the ethical use of AI in thesis writing included.

Theme-1: Transparency

Both students and academic supervisors presented their concerns about transparency in the use of AI for thesis writing. While students acknowledged the use of AI in improving their writing, most were not clear about when and how to disclose their use of these tools. Supervisors emphasized that students must be transparent about the extent to which AI tools have been utilized in their write ups. They also raised concerns about how this lack of declaration of using AI could affect the credibility of academic work. One supervisor stated,

"Students must be transparent about how much AI was used in their research, as it directly impacts the integrity of their thesis." Similarly, a student said, "It's not always clear when we need to disclose the use of AI."

Theme-2: Academic Integrity

The excessive use of AI leading to compromised academic integrity was a central theme. Supervisors were primarily concerned about the potential for Ai-generated content to blur the lines between original thought and automated assistance. Verifying AI-generated content posed a significant challenge, especially in ensuring that AI is used to supplement human effort rather than replace it. A common sentiment among supervisors was the need for clear institutional guidelines. One supervisor remarked, "We need institutional policies that define acceptable AI use and how to verify the integrity of AI-generated content."

Theme-3: Personal Development

Another key theme was the impact of AI on personal and intellectual development. While students saw AI as a way to refine their work and improve efficiency, supervisors worried that over-reliance on these tools could stunt critical thinking and learning. A balanced approach to AI use was widely supported, with supervisors advocating for AI to assist students rather than do the intellectual work for them. As one student observed, "AI saves time and helps me focus on research, but I still need to make sure my ideas are original."

Table-I: Themes and Subthemes from Supervisors and Students on Ethical AI Use (n=20)

Theme	Subtheme	Codes in Supervisors	Codes in Students	Total Codes
Transparency	Disclosing AI Use	6	5	11
	Credibility Concerns	3	8	11
	Value of AI	32	26	58
	Acknowledgment	5	16	21
	Ethical Integration	18	11	29
	Ensuring Original Work	15	15	30
Academic Integrity	Ethical Use of AI	3	3	6
	Guidance and Oversight	9	19	28
	Verification of AI Content	14	20	34
	Authorship and Credit	2	5	7
Personal Development	Learning and Growth	11	5	16
	Balanced Use of AI	13	6	19
	Evolving Practices and Skill Development	4	2	6
	Student Skill Development	3	1	4
	Continual Development	3	3	6
Supervision	Human Oversight	7	2	9
	Selection of AI Tools	4	2	6
Data Privacy	Secure Storage	1	5	6
	Legal Compliance	2	1	3
	Data Ownership	3	3	6
Total codes generated				316

Theme-5: Data Privacy

Data privacy was a significant concern, especially among students who feared their personal or research data might be compromised when using AI tools, particularly cloud-based platforms. Supervisors expressed these concerns, emphasizing the importance of secure storage and compliance with legal regulations. The role of supervisors was seen as critical in guiding students through the ethical use of AI tools. Supervisors stressed the need for human oversight to ensure that students use AI responsibly. They called for institutional frameworks to help them choose AI tools that align with ethical standards. One supervisor summed it up by stating, "Active supervision is essential to prevent ethical missteps in the use of Ai in thesis writing." (Table-II)

DISCUSSION

In our study, the supervisors stressed on the importance of training and educating students as well as faculty about AI tools. They raised concerns on the ethical aspects regarding the authenticity of the work produced by the students, hence recommending the documentation of usage of AI in the write ups. The idea was acknowledged by the students who stressed on creating guidelines to declare usage of AI in produced work. As the AI horizon expands, formulation of ethical guidelines becomes critical for ensuring integrity of the produced work across all academic disciplines.[7] Institutional support in the form of workshops for both teachers and students, clear policies representing the permissible use of AI tools, and accessible resources targeting the training and availability of infrastructure can ensure that both supervisors and students are well-equipped to navigate the ethical complexities that are introduced by ongoing advancements in AI technologies.[8] The findings of our study also highlight the importance of fostering a collaborative and nonjudgemental environment where students and supervisors actively engage in conversations about role of AI, encouraging transparency and mutual accountability in academic and clinical work.[9] This participatory approach is mandatory in shaping ethical AI use that aligns with academic values. The study reveals crucial themes from both supervisors' and students' perspectives regarding the ethical use of AI in thesis writing. In this study transparency emerged as the most frequently discussed theme, with the value of AI being a significant subtheme across both groups. These findings are in harmony with the existing studies.[10]

Table-II: Verbatim Quotes from Supervisors and Students on Ethical Use of Artificial Intelligence (n=20)

Theme	Subtheme	Verbatim - Supervisors	Verbatim - Students
Transparency	Disclosing AI Use	"Students must be transparent about the degree to which AI tools have been employed in their research." – Dr. A	"We acknowledge the need to disclose how much AI was used, but it's not always clear when it's necessary." – Student
	Credibility Concerns	"Using AI without proper context damages the credibility of academic work." – Dr. B	"AI helps, but we need to be careful; over-reliance could question the credibility of our thesis." – Student
	Value of AI	"AI can help students refine their ideas and improve their output, but it cannot replace the critical thinking needed." – Dr. Z	"AI tools like Grammarly make it easier to focus on research instead of language mistakes." – Student
	Ethical Integration	"Supervisors should ensure that AI is used responsibly, integrating ethics into how it's employed." – Dr. R	"We need guidelines on how to use AI ethically while doing our research." – Student
	Ensuring Original Work	"AI must not be a crutch; students should still produce original ideas." – Dr. Z	"AI helps with writing, but we understand we have to ensure our ideas are our own." – Student
Academic Integrity	Ethical Use of AI	"AI use should be transparent to maintain academic integrity." – Dr. I	"There's a fine line between using AI and crossing ethical boundaries. We need more clarity." – Student
	Guidance and Oversight	"Supervisors must guide students on how to use AI responsibly." – Dr. S	"We need more frequent check-ins to ensure we're using AI the right way." – Student
	Verification of AI Content	"Verifying AI-generated content is a challenge, but essential for ensuring integrity." – Dr. S	"Supervision helps in validating our AI-supported research, ensuring that it's up to standard." – Student
Personal Development	Learning and Growth	"AI should support but not replace the learning process. We need to help students grow academically." – Dr. I	"AI improves my writing, but it's important I learn from it, not depend on it." – Student
	Balanced Use of AI	"Balanced AI use is key—too much reliance hinders personal development." – Dr. F	"AI saves time, but we still need to critically think and develop our skills." – Student
	Evolving Practices	"Supervisors should stay updated with evolving AI tools to help guide students effectively." – Dr. Z	"Workshops help us understand how to use AI ethically and effectively." – Student
Supervision	Human Oversight	"Active supervision is necessary to guide students in AI usage and prevent ethical missteps." – Dr. A	"Supervisors help ensure that we don't misuse AI in our research." – Student
	Selection of AI Tools	"The right AI tools must be selected based on a student's needs and research goals." – Dr. S	"We need help choosing the right AI tools that match our thesis requirements." – Student
Data Privacy	Legal Compliance	"We must ensure that all data processed through AI complies with legal standards such as GDPR." – Dr. Z	"We worry about data privacy when using AI tools, especially for sensitive research." – Student
	Secure Storage	"Data must be securely stored when using AI in research to avoid breaches." – Dr. R	"We need clear policies for secure data handling when using AI." – Student

AI: Artificial Intelligence

Theme-4: Supervision Supervisors expressed grave concerns over students not fully disclosing their use of AI leading to compromised integrity, while students acknowledged the necessity yet considered it challenging to balance between AI-assisted work and originality. According to Kazley *et al.* students need guidance of faculty on usage of Ai tools as collaborators in work instead of tools for work, requiring full transparency in their use to maintain ethical standards.[11] In the light of thesis writing, this means that students must remain open about when and how they use AI to ensure the integrity of their work.

The findings of our study are in close alignment with Cervantes *et al.,* who also concluded that upholding academic integrity and fear of compromised academic integrity with AI tools was highlighted by the supervisors.[12] While students agreed that AI serves as an aid in academic writing, they also believed that vigilance in using technology was critical to ensure that AI supplements, rather than replaces human effort and creativity.[13]

The existing literature on the use of artificial intelligence supports the concerns of academic supervisors and students, highlighting that improper use of AI may lead to unintended plagiarism and manipulation of results if left unchecked. Both groups agreed that the ethical use requires a balance between AI-assisted productivity and personal responsibility for the produced work.[14] Both the supervisors and students discussed the role of AI in personal and skill development. Supervisors posed concerns that reliance on AI has the potential to hinder critical thinking as well as creativity, while students eyed AI to refine their work and save time. Existing literature supports that AI, used as a tool for development, rather than a substitute to balance human creativity and reasoning could be very useful.[15] Both supervisors and students agreed that AI should be used as a supplement to effort rather than replacement, and that proper guidance is essential to achieve this balance.

Supervisors emphasized on the formulation of institutional frameworks to aid students in choosing AI tools responsibly, while students valued close monitoring and vigilance as a guardrail to ensure ethical and productive use, which is reflected in other studies.[16,17] Proper supervisions act as a critical tool for promoting ethical standards in research, especially with rapidly evolving AI technologies. Data privacy issues were particularly highlighted by students in our research, fearing their work could be compromised when using cloud-based AI tools. This is in line with findings of other studies.[17,18] Supervisors shared this concern, advocating for secure storage and legal compliance with regulations. Similar concerns have been raised in academic setups globally and locally, where the integrity and ownership of research data processed by Ai systems remain contested.[19,20] Institutional policies that safeguard data privacy and ensure compliance with legal standards are therefore crucial in mitigating the risks and maintaining trust in AI tools.

LIMITATIONS OF STUDY

The study's small sample size and focus on select Pakistani universities limit the generalizability of the findings. Broader, cross-cultural studies with larger populations are needed to validate these results.

CONCLUSION

This study illustrates the complex relationship between AI usage and ethical standards in thesis writing. While both supervisors and students recognize the potential benefits of AI, they also highlight significant ethical concerns, including transparency, academic integrity, personal development, and data privacy. There is a consensus on the need for clear institutional guidelines to govern the ethical use of AI in research.

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Authors' Contribution

Following authors have made substantial contributions to the manuscript as under:

FS & ZK: Data acquisition, data analysis, critical review, approval of the final version to be published.

RA & MS: Study design, data interpretation, drafting the manuscript, critical review, approval of the final version to be published.

IT & SA: Conception, data acquisition, drafting the manuscript, approval of the final version to be published.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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