Lived Experienced of Graduate Students in Writing their Academic Research Paper Using Artificial Intelligence (AI) Tools

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ABSTRACT

This research investigates the utilization of AI tools in academic writing from the perspective of graduate students, focusing on their emotional experiences, challenges, and ethical concerns. The study utilizes a phenomenological design, involving in-depth interviews with eight graduate students who have experience using some of the AI tools for writing during the process of writing their thesis or dissertation. The findings indicate that participants experience different emotions, such as excitement or positive emotions; negative emotion, such as skepticism and distrust and mixed emotions were also evident due to apprehension of possible effects of diminishing critical thinking and ethical concerns. Technical issues, increased workload due to editing needs, and financial burden due to the expensive cost of a subscription to AI tools add to the challenges faced by the participant in the study. Moreover, the ethical concerns regarding plagiarism, data privacy, and the integrity of the generated content of AI tools were among the legitimate concerns of the participants. The result of this study contributes valuable insights to the impact of AI tools on academic writing, highlighting the importance of developing clear ethical guidelines and improving the functionality of AI tools to better support graduate students. These findings play a great role in the development of future policy and the ethical and responsible utilization of AI tools in the academe.

Keywords: *AI tools, academic writing, thesis/dissertation writing*

INTRODUCTION

The development and proliferation of the utilization of Artificial Intelligence tools (AI) in various sectors has significantly transformed practices and sparked innovation to provide and enhance efficiency not only in industry and business but also in the academe. Currently, AI tools have become a powerful instrument in research and writing, specifically for graduate academic requirements. Among the top tools utilized are for grammar checks and plagiarism, among others, in the process of improving the standards and quality of academic work.

In the study of Jordan and Mitchell (2019), it was stated that AI tools revolutionized education by improving and enhancing the efficiency, accuracy, and overall quality of scholarly work done by the students. This statement is parallel to the findings of Dwivede et al. (2021), which state the tremendous pressures confronted by graduate students to produce high-quality research papers just to comply with the standard of writing in the graduate school.

Furthermore, Floridi & Cowls (2019) reported that concerns about reliability, ethical use, and impact on originality were just a few of the challenges confronted related to the use of AI tools.

Zawacki-Richter et al. (2019) exemplified that understanding the dynamics of these experiences is relevant in the development of guidelines to support academic integrity and improve the process of writing. Glikson & Woolley (2020), on the other hand, indicate that graduate students experiences on the impact of the use of AI tools in writing provide insights on how it influences the total landscape of academic writing.

Moreover, this study aims to find our better AI tools tailored to the necessity of the graduate students and to design relevant policies that promote an ethical and efficient way to use AI in academic writing. The purpose of this research is to investigate and verify the lived experiences of grad uate students using AI tools for writing their academic papers. Specifically, it seeks to understand the emotional feelings brought about by AI tools, identify challenges and benefits of using AI tools, and highlight ethical considerations. By addressing these objectives, the study aims to bridge the gap between the potential benefits of AI tools and the actual experiences of students who use them (Luckin et al., 2019).

The research utilized phenomenological research design to capture the lived experiences of participants using AI tools in the process of writing their thesis or dissertation. Data was collected through in-depth, semi-structured interviews with participants who had experience using some of these AI tools for academic writing. Findings from this study reveal a range of emotional responses, practical challenges, and ethical concerns associated with the use of AI in academic writing, providing valuable insights into the complexities of integrating AI tools in academic contexts.

LITERATURE REVIEW

Currently, the utilization of AI tools substantially increases in the academe. In the report of Elsevier (2023), the transformation of the utilization and relevance of AI tools in different fields has become too relevant, providing more advanced solutions for more complex problems and making decision-making processes faster and more accurate, driven by innovation. However, in spite of the wide utilization of AI tools in research, they still present unique challenges to fully exploit their capability.

McKinsey Global Institute (2021) stated that learning and upskilling are essential for researchers to keep pace with evolving AI technologies and methodologies. Furthermore, the Royal Society (2019) emphasizes the need for ongoing professional development in AI to ensure effective integration of new tools and approaches in academic work. This indicates how the integration of AI tools is continuing to impact various sectors in terms of productivity, accuracy, and quality. According to Smith & Johnson (2023), in the United States, 45% of graduate students in education have utilized AI tools to assist them in writing their thesis or dissertation, and it continues to increase steadily. The study of the University of Cambridge (2023) stated that graduate students in the doctoral program utilized AI tools to enhance the quality and coherence of their papers. Furthermore, the University of Oxford (2023) concluded in their study that graduate students in the humanities and social sciences utilized AI tools in editing their dissertations. The findings show that the writing skills improved by 30% and enhanced the quality of academic writing. A similar study at Stanford University (2023)

revealed that 40% of graduate students in STEM utilized AI tools for data analysis and literature review, resulting in a more comprehensive dissertation.

A study in Australia at the University of Sydney (2023) supports the findings in the United States, wherein 55% of doctoral candidates are using AI tools in writing their thesis in the areas of literature review, data analysis, and document formatting. Which indicates an improvement of 20% in the overall quality because of AI tool utilization.

A similar study conducted in Japan by the Ministry of Education, Culture, Sports, Science, and Technology (2023) reported a 25% increase in AI-related research publications over the past year, due to AI innovation. Comparably, a subsequent report in Korea by the National Research Foundation (2023) highlighted that 70% of major universities in South Korea have integrated AI tools into their research frameworks. In China, a survey conducted by Tsinghua University (2023) found that AI research funding had increased by 40% over the past year, supporting a surge in AI-related academic publications and projects. This trend underscores China's strategic focus on becoming a global leader in AI research and application.

A related study in Singapore conducted by the National University (2023) reported that 60% of graduate students are utilizing AI tools for their academic writing, particularly to aid large volumes of research data and enhance clarity and coherence of documents. Meanwhile, Dhari (2024) stated that 50% of doctoral students generally improved the quality of their dissertations when they used AI tools.

A study by a local university in the Philippines, such as Ateneo de Manila University (2023), revealed that 40% of graduate students are using AI tools to assist in writing their theses and dissertations to assist in generating ideas, structuring documents, and enhancing grammar and style.

In spite of the growing support and utilization of AI tools in the academe as cited by the literature, there are research gaps that this research aims to address. Firstly, while global, national, and local studies highlight the adoption and benefits of AI tools, there is limited understanding of the lived experiences of graduate students using these tools. This phenomenological study will provide deep insights into how AI tools impact their emotional and cognitive states, the practical challenges they face, and the perceived benefits these tools can bring. Moreover, existing studies primarily focus on the technical and functional aspects of AI tools. There is a need for research to explore the emotional feeling, challenges, benefits, and ethical considerations related to the use of AI tools in academic writing.

Lastly, there is a methodological gap in the literature. Most studies use quantitative approaches to assess the impact of AI tools. This research employs a phenomenological research design, which is underexplored in the context of AI in academe. By focusing on the lived experiences of graduate students, this study will provide comprehensive insights into the practical application and impact of the utilization of AI tools in the eyes of graduate students.

METHODS

This research used a qualitative research approach, specifically the qualitative phenomenological research design, to facilitate the researcher in discerning and comprehending the experiences and coping strategies of Filipino adolescents in single-father households.

This research utilized eight graduate students who have experience using AI tools as an aid in writing their academic papers. The purposive sampling procedure is also utilized in the selection of participants in this study.

Data collection involved in-depth, semi-structured interviews with each of the eight participants. The semi-structured interview format allows for flexibility in exploring participants' experiences while ensuring that key topics related to the use of AI tools in academic writing are covered.

Data analysis followed a phenomenological research design, involving several steps to distill the essence of participants' experiences with AI tools in academic writing. These are familiarization; coding; thematic analysis; textural and structural descriptions; essence of experience; and validation. This method allows an in-depth exploration of graduate students' lived experiences with AI tools in academic writing, providing valuable insights into the area of emotional feelings, benefits, and challenges and providing better context for policy development.

RESULTS AND DISCUSSION

This section provides results, discussion, and comprehensive analysis of the data gathered during the study. This section not only presents the key findings but also interprets these results in the context of existing literature, offering insights on how AI tools impact the writing experiences of the graduate students.

Participants Emotions toward AI Tool Utilization

This part of the study discusses the feelings of the graduate education students as a result of their writing experiences. From the responses of the participants, the researcher was able to form three themes of what they have experienced. The themes that emerged were ***positive emotions***, ***negative emotions***, and ***mixed emotions.***

Positive Emotions

Positive emotions is one of the key themes that emerged from data gathered from participants who have utilized and experienced AI tools in writing academic papers. Among the statements mentioned by the participants is the one mentioned by Participant 2: "***It was helpful and reassuring to have my grammar checked, especially when I'm overwhelmed with many ideas and long hours of work."*** Other participants also reported that they had experienced Participant 3: "I am excited and relieved due to the convenience it can offer,**"** and Participant 6 stated, ***"I felt excitement and curiosity at the beginning using AI tools. Because they can suggest a variety of methodologies and ideas quickly. I felt relief and satisfaction whenever results were generated***. They expressed emotions such as "***excitement and relief," highlighting*** how AI tools made their writing processes more manageable and less stressful due to the idea it can bring to them. Participants also noted the feelings of anticipation and ease that AI could bring to their work. Participants commented like "***anticipation of ease in writing process with AI tools"*** and "***stress reduction through AI tool assistance."*** These statements indicate that AI tools not only provide positive feeling and impact to the participants but also generate excitement and curiosity in utilizing AI tools to assist them.

The findings of Dwivedi et al. (2021) support the positive emotions, such as excitement and relief, are often linked to the convenience and efficiency AI tools provide. Likewise, Glikson and Woolley (2020) stated that users of the AI tools anticipate easier writing process outcomes and experience stress relief through AI assistance. It is worth noting that when AI tools are utilized, it generates a feeling of satisfaction, which further contributes to feelings of relief, satisfaction, and enthusiasm. In summary, the participants' responses revealed that the utilization of AI tools in academic writing alleviates the stress but also improves overall quality.

Negative Emotions

The next theme that emerged is the negative emotions expressed by the participants. Participant 6 reported, "I exercise caution, especially concerning reliability and accuracy of information. Many times, I have to checked the cited resources..." Participant 1 stated, "I feel that when I read 100% AI-generated writing, there is no human touch in it," which were among the statements expressed during the interview. This reaction of participants is brought about by the perceived limitations of AI tools and the complications when manipulating and relying on tools like this.

In their study, Floridi and Cowls (2019) indicate that the common reaction among AI-generated data is the question of reliability and validity. On the other hand, findings of Binns (2018) state that limitations of AI tools to grasp the human language intricacies lead to the perception of inaccurate results, leading to skepticism. Thus, this perceived inaccuracy creates negative connotations among participants, thereby wasting time. Inefficiency in the long run will take place.

Mixed Emotions

The third theme that emerged in this study is mixed emotions. Participant 1 stated that "I have mixed feelings whenever I use AI tools." Participant 2 discussed "Sometimes, it feels like my brain is fried, making constructing or applying proper grammar difficult." This statement of ambivalence toward AI use mirrors the combination of excitement about the potential of the tools and also the enduring concerns about the AI limitations.

Duality of emotion when interacting with AI is empowered by both its capabilities and uncertainty about the implication (Eubanks, 2018). Meanwhile, Shneiderma (2020) discusses that the feeling of ambivalence is a momentary reaction but may also present an ongoing internal conflict between the present of AI and professional lives. Therefore, mixed emotions underscore the complexity of participants experiences with AI tools in academic writing and issues about the reliability and potential impact of the existing practices in research.

Practical Challenges in Using AI Tools

This section of the paper discusses the different challenges the participants had confronted in the use of AI tools in writing their thesis or dissertation. From the responses of the participants, the following are themes that emerged: ***technical and reliability issues;*** *workload and quality concerns; ethical and integrity issues; and economic and accessibility issues.*

Technical and reliability issues

The participants reported that during the process of using AI tools in writing their thesis or dissertation, Participant 1 mentioned that "***reliability and a high similarity index are my main concerns,***" while Participant 3 stated that ***"some sources are outdated and citation issues,"*** and Participant 4 discussed that ***"challenges in integrating AI tools in research writing include the limitations of free versions of these applications, which are the ones readily available to anyone."*** This reaction perhaps is intensified by misleading information provided by AI tools, which leads them to distrust and unreliable facts.

According to Marcus & David (2019), the lack of AI tools and contextual understanding relevant to generating reliable and precise information highlights the risks associated with depending on AI for critical tasks that undermine the credibility of academic output. Relevance of transparency and accountability in the AI process are among the elements that contribute to the anxiety and skepticism experienced by graduate students (Stix, 2021).

Workload and Quality Concerns

Participants express that workload and quality concerns are another theme that emerge in relation to challenges in the utilization of AI tools. Participant 1 stated that "***the challenging part is paraphrasing it because it always seems like the best word options and sentence constructions are done by AI,"*** and Participant 4 mentioned that ***"another challenge is that AI tools are not perfect. If I rely on them too much without double-checking the manuscript, the mistake would be costly."*** The perceived increase in workload is among the particular promises of AI tools to deliver the moment they are utilized in writing; however, dissatisfaction, lack of originality, and perception of diminished quality of work lead to frustration.

The findings are parallel to Carr (2020), discusses that sometimes AI tools fail to capture the creativity essential for academic writing, which can increase rather than decrease the workload due to the need for human oversight and intervention. On the other hand, Bommasani et al. (2021) point out the limitations of AI, particularly on the foundation models, generating content, implications, and application in various fields.

Ethical and integrity issues

Another theme that emerged is the ethical and integrity issues of AI tools. The possible drawback of the AI tools is the concern on similarity index. Participant 4 stated "***the difficulty of revising AI-generated content to ensure it is both original and of high quality,"*** which can be flagged by similarity index and can trigger ethical concerns about the veracity of AI tools in academic context.

The findings of Wang, Y., & Siau, K. (2022) supports that research investigates AI applications in educational institutions, stressing the need for frameworks that prevent misuse and unethical practices, which aligns with UP's guidelines on soft regulations for AI. The study calls for a balance between innovation and ethics to ensure AI benefits both students and educators.

Economic and accessibility issues

Lastly, the participants mentioned the economic and accessibility issues of AI tools, which pose greater concerns. Participant 4 mentioned ***"the cost of premium versions can be prohibitively high for many students."*** The free versions of AI tools offer limited functionality,

while the premium version is expensive, if not too expensive, and sometimes formatting and access are difficult to handle effectively.

According to Bhatia (2023), the challenges in terms of the cost of the AI tools can be barriers both for institutions and students as well, while Celik et al. (2022) discussed that exploring the AI in education while it can benefit the students but financial implications can limit access. Thus, this concern poses great concerns in relation to finance and accessibility as well.

AI tools Enhancing Quality and Efficiency of Academic Writing

This section of the paper discussed the relevance of AI tools in enhancing quality and efficiency AI tools can bring in writing academic papers. Based on the participants feedback, themes that emerged were ***"enhanced academic and research quality;*** and ***"support for writing and research tasks.***

Enhanced Academic and Research Quality

From the perspective of participants, AI tools enhanced academic and research quality. Participant 6 stated that ***"AI tools enhance research quality and efficiency,"*** and Participant 4 stated that ***"AI tools improve validity through grammar checks, plagiarism detection, and data analysis."*** Participant 3 mentioned ***"convenience for brainstorming, writing structure, and organization.".*** Based on these statements, AI tools significantly contribute to the rigor of academic overall quality and can also serve as expert mentors.

In the study conducted by Williams and Ahmend (2022) indicate the crucial role of AI tools in processing, management, and analysis of large data efficiently. The capability AI tools can provide depth and comprehensive findings that contribute scholarly output. Zhang et al. (2023) also support the report on the significant improvement of graduate students in terms of writing speed, overall efficiency, and higher quality work.

Support for Writing and Research Tasks

Numerous pieces of literature mentioned what AI tools can provide in terms of support for various writing and research tasks. Participants 5 claimed that "***I was able to identify the themes, and at the same time it provided graphs of the data encoded,"*** and Participant 6 expressed that ***"AI also helps me polish a research paper's grammar, style, and structure to enhance the overall quality,"*** which indicates that students appreciate how AI tools can handle mechanical aspects of writing, referencing and ensuring grammatical correctness that allow the participants to focus on intellectual and creative aspects of writing.

According to Lee & Park (2021), AI tools significantly reduced the cognitive load associated with writing tasks, enabling students to focus on the more creative and analytical aspects of their work. Furthermore, AI tools can also assist in the creation of themes, mathematical computations, and specific writing tasks. Anderson & Pete (2022) elaborate that AI tools improve effectively the language precision to meet the academic standard of writing. Furthermore, according to Patel & Singh (2023), students who utilize AI tools in the conceptualization of ideas produce more structured and cohesive research papers.

Ethical Concerns on the Use of AI Tools

This section of the paper discussed the ethical concerns of participants on the use of AI tools in writing their thesis or dissertation. Based on the participants input, the themes that emerged were ***"maintaining human elements and ethical considerations"*** and ***"maintaining data privacy and avoiding plagiarism.".***

Maintaining Human Element and Ethical Considerations

Participants of this study stated that while AI tools provided significant potentials for writing and other relevant activities, Participant 4 mentioned that "ethically***, writers and researchers must be upfront about their use of AI tools in writing, summarizing, and composing text,"*** and Participant 1 stated that ***"a personal human touch in writing is always important***." These are relevant concerns on the utilization of AI tools because, at the end of the day, we cannot undermine the role of human input in academic writing and the significance of creating standards for ethical considerations.

In the study of Chen et al. (2020), it was exemplified that the human element in writing is crucial for ensuring that research reflects personal insight and creativity, which no artificial intelligence can replicate. Bhatia (2023), on the other hand, emphasizes the need for transparency in disclosing the use of AI tools in academic work to maintain academic integrity and prevent misrepresentation of AI-generated ideas. Finally, according to Celik et al. (2022), standardized policies can ensure that researchers use AI tools ethically and responsibly. This also set clear boundaries on how AI can be integrated into academic work with fairness and integrity.

Maintaining Data Privacy and Avoiding Plagiarism

According to Participants 5, "it is of vital importance to consider confidentiality so that we won't be charged with violating the data privacy law" and "another ethical consideration is plagiarism; I do believe that coming up with research that is free if a plagiarized statement would make it credible" were among the concerns of the participants in writing academic papers. There is a necessity to improve the quality and its content; however, it is also necessary to ethically maintain data privacy and avoid incidences of plagiarism, thus maximizing the benefits of AI tools.

According to Borenstein & Howard (2020), ethical considerations, data privacy, and transparency about AI use are critical. Therefore, developing institutional guidelines and ensuring compliance can help users of AI tools to responsibly and ethically utilize them (Luckin et al., 2019). This is parallel to the findings of Glikson & Woolley (2020), where privacy and plagiarism are significant concerns when using AI. Ensuring data privacy and protecting sensitive information are paramount to maintaining trust and credibility in research. Additionally, ethical use of AI tools and transparency about their use are necessary to avoid plagiarism and uphold academic standards.

CONCLUSION, IMPLICATIONS, SUGGESTION, AND LIMITATIONS

This study exemplified the lived experience of the graduate student in utilizing AI tools in writing their academic research. The data indicates that there are substantial benefits that can be generated from the use of AI tools, such as enhancement of overall quality and efficiency in the production research output. However, it remains to have challenges on the reliability,

workload, ethical and accessibility issues, and clear guidelines on the use of AI tools, so academic integrity, human element, and scholarly quality can be maintained. The study also recognized the limitation in terms of sample size, which restricts generalization and creates inadequacy to represent the diverse experiences and perspectives of graduate students. Thus, future research may focus on how to establish parameters and guidelines for the utilization of AI tools in the graduate school.

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