ISSN No: -2456-2165 https://doi.org/10.38124/ijisrt/25dec334

A Comprehensive Qualitative Analysis of Artificial Intelligence's Potential to Improve Higher Education Students' Learning in Comparison to Current Research (2019–2025)

Saedah Khader[1]; Madline Khalil[2];

[1,2]An-Najah National University Faculty of Graduate Studies PhD Program in Teaching &Amp; Learning

Publication Date: 2025/12/11

Abstract: Study Abstract Through a thorough examination of their experiences, opinions, and methods for incorporating these technologies into their academic pursuits, this qualitative study seeks to determine the efficacy of artificial intelligence (AI) tools among students in higher education. There is an urgent need for qualitative research that go beyond solely quantitative indicators and concentrate on comprehending the human experience underlying the usage of these technologies, given the growing prominence of generative and analytical AI over the past five years. The. Twelve male and female students from Master's and PhD programs, representing a variety of disciplines, participated in semi-structured interviews as part of the study's qualitative methodology. Thematic analysis was used to examine the data. The study came to several important conclusions, chief among them being that, in addition to its role in increasing students' organizational efficiency, artificial intelligence (AI) efficiently contributes to improving the quality of academic writing, developing analytical skills, and lowering anxiety associated to research work. Conversely, the results revealed concerns related to ethics, over-reliance, and the blurring of students' academic identity. The study also highlighted a clear gap between students' use of technology and the capacity of educational institutions to develop policies regulating that use. A comparison with earlier research (2019–2025) reveals that the results of this study offer a critical perspective on the psychological and behavioral effects of this use and contribute to a deeper qualitative understanding of the interaction between students and artificial intelligence. This is because most earlier research did not pay as much attention to the deep affective and cognitive aspects. The study's recommendations for creating more equitable educational systems, raising students' ethical consciousness, and creating participatory learning models that use AI as a supplementary rather than a replacement tool are included in its conclusion.

Keywords: *Artificial Intelligence, Higher Education, Educational Efficiency, Qualitative Research, Student Experience.*

How to Cite: Saedah Khader; Madline Khalil; (2025) A Comprehensive Qualitative Analysis of Artificial Intelligence's Potential to Improve Higher Education Students' Learning in Comparison to Current Research (2019–2025). *International Journal of Innovative Science and Research Technology*, 10(12), 285-291. https://doi.org/10.38124/ijisrt/25dec334

I. INTRODUCTION

The world has seen a dramatic change in the nature of technology systems over the last 20 years as a result of the quick development of artificial intelligence (AI), which is now pervasive in modern life, particularly in the field of education. With the introduction of generative AI models like ChatGPT in 2022, a number of intelligent applications that could generate knowledge, analyze data, support learning processes, and offer users immediate assistance in a way that was previously unattainable were made possible (OpenAI, 2023). Educational institutions around the world have started to reevaluate their teaching strategies, methods of evaluation, and the 21st-century skills that students need to interact successfully in a learning environment that is fundamentally altering as a result of these tools' growing capabilities.

The past five years have shown that artificial intelligence (AI) is no longer just an assistive tool but has evolved into a crucial component of the educational system, posing difficult problems regarding its function, constraints, efficacy, and promise in aiding researchers and students. According to recent studies, more than 70% of students use generative AI tools for data analysis, academic writing, summarizing scientific information, and coming up with research ideas (Johnson & Buchanan, 2021; Lee & Choi, 2023). According to other reports, students—especially master's and doctorate students—rely on AI to help them organize knowledge and create more cohesive academic content, as well as to lessen the stress that comes with research assignments (Heffernan, 2022).

ISSN No: -2456-2165 https://doi.org/10.38124/ijisrt/25dec334

The usefulness of AI in higher education, particularly for graduate students, is still up for debate despite recent advancements. The impact of a tool on higher-order thinking skills, academic identity, research independence, and critical analytical abilities is just as important as its ability to help students complete a particular assignment. While students frequently believe that artificial intelligence (AI) offers them substantial cognitive and linguistic support, a variety of qualitative and quantitative studies have demonstrated that AI also raises fundamental questions about ethics, authenticity, the dangers of over-reliance, and the loss of independent thought (Kasneci et al., 2023; Dwivedi et al., 2023).

According to recent research, artificial intelligence (AI) offers enormous educational potential, but it also creates significant obstacles to learning itself. While some researchers contend that AI tools improve academic output and provide more individualized and inclusive learning opportunities, others contend that they may eventually impair students' abilities and have a detrimental effect on the development of self-knowledge, particularly if they are not employed in a clear and thoughtful educational framework (Rudolph et al., 2023; Susnjak, 2022). Despite being crucial to comprehending the nature of the relationship between people and technology in the context of higher education, the voices of the students themselves—as the principal users of these tools—remain underrepresented in the literature in both situations. This emphasizes the necessity for comprehensive qualitative research that investigates students' individual experiences, perceptions, driving forces, and worries about the application of artificial intelligence (AI) techniques. The majority of research done between 2019 and 2024 relies on quantitative techniques that measure performance or broad trends without sufficiently addressing the actual human experience that underlies the use of these technologies. Additionally, the number of participants in the qualitative studies that are currently accessible is still small, they are limited to particular disciplines, or they concentrate on specific characteristics that do not fully represent the image of AI application in higher education.

Thus, the significance of this study, which uses a qualitative methodology based on in-depth interviews with a group of master's and doctorate students to examine the efficacy of AI use among higher education students. This study is unique in that it aims to comprehend the meaning of AI from the students' own viewpoints and what it means for them on an educational, research, and psychological level rather than just documenting its application. This kind of analysis is important because it may show the complexity of the human experience as well as the behavioral and cognitive aspects that cannot be explained by quantitative methods alone. The direct comparison of the current study's results with those of earlier research carried out over the previous five years makes it unique. This makes it possible to analyze knowledge gaps and emphasizes the fresh perspectives this research offers. This comparison clarifies new developments in the application of artificial intelligence (AI) and helps situate the study's findings within a larger scientific framework.

Additionally, the Green Line's institutions' educational landscape is rapidly changing digitally, but there aren't any clear regulations governing the use of AI in academic contexts. Given the increasing reliance of students on AI tools without systematic direction or a thorough institutional knowledge of the repercussions of this use, this makes addressing this topic an urgent educational imperative. Because AI can either help or hinder the research process, this topic is especially important for graduate students working on research projects that require academic writing, critical thinking, and the capacity to generate unique information.

The results of this study should pave the way for scholars and educational officials to create more equitable educational policies that take into account both the educational advantages of AI and its ethical and epistemological hazards. Additionally, the study offers a comprehensive qualitative approach that might serve as a foundation for further research on human-technology interaction in more intricate educational settings.

Based on the aforementioned, it can be concluded that the current study enhances its scientific worth and practical utility by addressing a relevant research subject that still needs to be explored in contemporary literature and by responding to a legitimate scientific and educational demand.

II. THE STUDY'S ISSUE

There is still a significant knowledge gap about the efficacy of artificial intelligence tools, despite their quick adoption in educational settings and students' growing dependence on them.

When applied in research and educational settings, particularly with graduate students, who are the group most commonly subjected to challenging writing and research assignments.

Additionally, the majority of research on this subject over the past five years has taken a quantitative approach, concentrating on gauging performance and accomplishment rather than offering a thorough qualitative depiction of students' experiences, emotions, subjective perceptions of the technology, and its limitations. As a result, our understanding of the human experience that underlies the application of artificial intelligence is still lacking.

➢ *Thus, the Issue this Study Attempts to Solve is:*

In contrast to prior studies, there aren't many qualitative studies that examine how higher education students use AI technologies and thoroughly examine how beneficial these tools are from their point of view, emphasizing the new information this research adds.

➢ *Third: Questions for Research*

- How do students in higher education feel about utilizing AI tools for their research and academic work?
- What elements do they think improve their education and help them succeed academically?

ISSN No: -2456-2165 https://doi.org/10.38124/ijisrt/25dec334

- When using these instruments, what difficulties and worries do people encounter?
- How do they feel about the morality and dependability of utilizing AI?
- In comparison to earlier research carried out between 2019 and 2024, what novel insights does this study offer?
- How much do these resources help raise the standard of student learning?

➢ *Fourth: Research Hypotheses (These Act as Guiding Hypotheses Because this is a Qualitative Study)*

- Students are supposed to believe that artificial intelligence would help them write and research better.
- Concerns about ethics and over-reliance are anticipated.
- It is expected that students from various disciplines will have varied perspectives.
- It is anticipated that artificial intelligence will have both beneficial and detrimental effects on learning and academic identity.

➢ *Fifth: Study Objectives*

1. To analyze the experience of higher education students in using artificial intelligence tools.
2. To assess these tools' efficacy from the viewpoint of the pupils.
3. To investigate the difficulties pupils, encounter when using it.
4. To examine the parallels and contrasts between the study's findings and those of earlier research.
5. To offer useful suggestions to academic policymakers and universities.

➢ *Sixth: Importance of the Study*

- *First: Importance to Science*

✓ It closes a glaring qualitative gap in the body of existing literature.
✓ It contributes to a better comprehension of the cognitive and affective aspects of using artificial intelligence.
✓ It offers a research model that can be expanded upon in subsequent investigations.

- *Second: Useful Importance*

✓ It makes it possible for educators and students to comprehend the advantages and drawbacks of smart tools.
✓ It assists universities in creating efficient and moral regulations for the usage of AI.
✓ It encourages the creation of curriculum that use artificial intelligence in a way that is both pedagogically sound and effective.

➢ *Seventh: Research Restrictions*

- Human Restrictions: Only twelve Master's and PhD students were included in the study.
- Geographical Restrictions: It was used at Green Line universities.
- Temporal Restrictions: Information was gathered over the academic year 2024–2025.
- Methodological Limitations: It does not generalize findings and instead uses a qualitative technique that describes experiences.
- Subject Limitations: It solely concentrates on artificial intelligence's efficacy in academic settings.

➢ *Eighth: Terminological and Operational Definitions*

- Terminologically speaking, artificial intelligence A collection of digital systems with learning, generation, analysis, and decision-making capabilities. (Operationally in this study) This relates to: ChatGPT, Grammarly Academic, Copilot, and other generative AI technologies that students use for academic assignments.
- Educational Effectiveness (Conceptual): How well a tool accomplishes learning goals. (In terms of operations) The degree to which students believe that employing artificial intelligence enhances their writing, learning, organization, and capacity for conducting research.
- Students in Higher Education PhD and master's students. What made the researcher choose these definitions?
- Because they are congruent with contemporary literature, allow for a thorough examination of the relationship between students and technology, and are most similar to the nature of qualitative research, which focuses on human experience.

➢ *Initially, the Extended Theoretical Framework*

- *Higher Education and Generative Artificial Intelligence: Overall Context*

Academic knowledge production has undergone a revolution thanks to language models and generative systems (such writing aids and intelligent conversation tools). They can now produce cohesive essays, summarize literature, offer quick feedback, and suggest other arguing patterns. This change has forced academic institutions to reevaluate their methods of instruction and evaluation as well as the 21st-century competencies that graduate students ought to have.

- *Features of Generative Writing and Research Tools*

✓ Text Production and Editing: Offering more accurate formulations, enhancing argumentative structure and coherence, and supporting linguistic editing.
✓ Organization and Summarization of Literature: condensing long texts, creating first concept maps, and emphasizing important ideas.
✓ Instant feedback, which may be adjusted to the student's level and includes comments on writing style, reasoning, and references.

- *Important Educational Possibilities*

✓ Enhancing textual coherence and lessening the load of preliminary editing to improve the caliber of academic writing.

ISSN No: -2456-2165 https://doi.org/10.38124/ijisrt/25dec334

- ✓ By dividing difficult work into doable steps, one can improve cognitive organization and lessen anxiety.
- ✓ Customizing instruction by developing learning pathways that change based on the needs and stage of each student.

- *Difficulties and Morality*

- ✓ Academic integrity and authenticity: the possibility of plagiarism or stifling the researcher's own voice.
- ✓ Over-reliance: The possible deterioration of critical thinking and independent thought.
- ✓ Transparency and privacy: It's important to make usage policies and data security clear.
- ✓ Institutional policies: There is sometimes a disconnect between practice and legislation since usage comes before governance.

- *Models Explaining Student Adoption of Tools*

The Technology Acceptance Model (TAM) is one of the models used to explain the adoption of student tools. Adoption is more likely when perceived utility and usability are high.

- ✓ The Unified Technology Adoption Model (UTAUT) incorporates the impact of institutional support and the social environment.
- ✓ Constructivist Learning Perspective: Needs to include tools into real-world tasks that stimulate evaluation, synthesis, and analysis.

- *The Gender Perspective*

Recent research indicates that adoption rates and usage patterns vary by gender. While men use AI more heavily in some situations, women are typically more wary about dependency and privacy. Consequently, the study's emphasis on female PhD candidates is a crucial scientific step toward closing the gap in the literature and comprehending the reasons, worries, and responsible usage practices of this population. in order to close the gap in the research and comprehend this group's concerns, motives, and responsible use techniques.

- *Transitioning from "Supporting Tool" to "Learning Partner"*

Instead, then taking the place of human thought and writing, artificial intelligence should be seen as a supplement. Academic assignments that require students to rework drafts in their own voice and openly record any use of AI tools in text production are advised in order to show the value of individual ideas.

III. METHODOLOGY

➢ *Study Design*

- Type of Study: Investigative
- Semi-structured (individual) interviews that are accurately transcribed after being videotaped with participants' permission serve as the data collection tool.
- Analytical Approach: The researcher used a reflective approach to thematic analysis.

➢ *Study Population and Sample*

- Completed Exploration Phase (as in your material): Twelve participants with a range of specializations from Master's and PhD programs at Green Line universities.
- Final Publication Expansion Plan: 24–30 persons is the target size.
- Composition: at least 65% of PhD students are female, and at least 70% are female. Purposive sampling with maximal diversity (specializations, academic level, usage intensity: low–medium–high) is the selection methodology.
- Justification: To illustrate the subtleties of gender and specialty experience and to examine how institutions and policies affect usage trends.

➢ *Guidelines for Interviews (Primary Themes)*

- Academic Employment Scenarios and Motivations for Use (writing, summarizing, analyzing, arranging).
- How tools affect research identity, academic anxiety, time management, and writing quality.
- Ethical and Policy Issues (disclosure, privacy, course/faculty positions, authenticity).
- Disparities by academic year, specialization, and gender.
- Suggestions from Participants to Enhance Responsible Use in Programs.

✓ Practical Note: An informed permission form, a quick demographic data form, and the whole guidance can be appended to the article.

➢ *Data Collection Procedures*

- Individual interviews (45–60 minutes) in person or via secure platforms.
- Institutional ethical approval, information sheets for participants, and written informed consent.
- Participants will be coded with non-identifying codes (e.g., D–F–07 for female PhD student, participant number 7).

➢ *Thematic Analysis and its Steps*

- Data Identification: Repeatedly reading the transcripts and noting initial impressions.
- Initial Coding: Inductive/Deductive reasoning, with standardized symbol definitions in a "Coding Glossary."
- Theme Generation: Creating theme "families" out of semantically related symbols.
- Review, Definition, and Labeling: Analyzing themes' internal and external coherence and creating accurate definitions.
- Report writing: Providing an analytical story backed by well-chosen quotes and examples.

ISSN No: -2456-2165 https://doi.org/10.38124/ijisrt/25dec334

➢ *Guaranteeing Qualitative Dependability*

- Validity: When policy documents are accessible, members verify theme summaries and triangulate sources.
- Reliability and Confirmation: A review procedure that comprises the coding files' archiving, the researcher's reflecting notes, and documentation of analytical choices.
- Transferability: A thorough explanation of the sample's features as well as the institutional and subject context.
- Ethics: Data protection, strict confidentiality, anonymity, and clear disclosure of the use of intelligent technologies in the final report's authoring.

➢ *Third: Objective Evaluation of Findings (Publication Organization)*

Similar to your material, the primary themes from the exploration phase (12 participants) are presented in an orderly manner below, along with a publishable structure and a recommendation for enhancing them later when the sample size is increased.

- *Topic (1): Enhancing Academic Writing Quality and Linguistic Uniformity*

✓ Analytical Conclusion: Smart tools clearly improve style, organize argumentative structure, and minimize linguistic faults; this enhances the quality of first drafts and cuts down on editing time.
✓ Brief Discussion: Rewriting drafts in one's own voice and utilizing documentation that amply illustrates the tool's influence are two ways to prevent the loss of the researcher's personal voice.

- *Topic (2): Efficiency, Organization, and Lowering Academic Stress*

✓ Analytical Summary: By breaking down difficult activities and summarizing material, intelligent technologies lower stress and improve time management effectiveness.
✓ Brief Discussion: Activities that call for tracking down original sources, reading extensively, and connecting automated summaries to peer-reviewed materials are advised in order to lessen reliance.

- *Topic (3): Academic Integrity and Ethics*

✓ Analytical Summary: Participants commonly voice concerns about privacy, originality, and plagiarism. Some also point out the lack of explicit institutional regulations.
✓ Brief Discussion: To address these issues, disclosure requirements, AI literacy training programs, and a publicly accessible policy for tool use are needed.

- *Topic (4): The Voice of the Researcher and Academic Identity*

✓ An analytical synopsis It is clear that writing identity must be protected; some participants think that the effects of automated editing could standardize writing styles.
✓ Brief Discussion: Using a "AI Trace Log" makes it simpler for assessors to discern between automated recommendations and human involvement by revealing written conclusions.

- *Topic (5): Institutional/Policy Gap*

✓ Analytical Conclusion: There are disparities in practice and regulation in certain settings where the practical use of AI comes before governance. Brief Discussion: It is advised to have a thorough institutional framework that includes definitions, disclosure, safeguards, training, and models of authentic assessment.
✓ Enhancement When Expanding: The analytical narrative is enhanced and credibility is strengthened by adding brief, verbatim quotes (two to three lines) for each topic, denoted by participant symbols.

IV. CONVERSATION

➢ *Consistency of Results with Literature:*

The literature's findings about potential (better writing, personalization, and anxiety reduction) and obstacles (integrity, dependability, and privacy) intersect with the issues of analysis.), justifying the shift towards authentic assessments and the establishment of a clear policy for dealing with AI tools.

➢ *Gender Perspective:*

The sample's predominantly female doctoral students allows for the identification of subtle differences in usage motivations and ethical risk sensitivity, highlighting the impact of supportive policies and training on bridging gaps.

➢ *Institutional Frameworks:*

The need to adopt transparent policies that align with ethical principles and privacy protections, and to enhance faculty and student AI literacy.

V. PRACTICAL RECOMMENDATIONS FOR UNIVERSITIES AND COLLEGES

➢ Adopt a transparent usage policy that clarifies permitted/restricted uses, disclosure rules, and data protection protocols.
➢ Transform assessment into authentic tasks (projects with original data, oral presentations, critical analysis reports).
➢ Build AI literacy skills among students and faculty (detection of hallucinations, source verification, bias identification, and documentation).

- *For PhD Programs (with Special Consideration for Female Students):*

✓ Include an AI impact notebook in the research writing pathways for dissertations and articles.
✓ Sessions of supervision that emphasize maintaining the voice of the study and distinguishing between automated assistance and unique contributions.

ISSN No: -2456-2165 https://doi.org/10.38124/ijisrt/25dec334

✓ Gender-sensitive training and a policy that clearly defines when disclosure is necessary and promotes responsible use rather than outright prohibition.

VI. STUDY LIMITATIONS AND FUTURE PROSPECTS

➢ Phase 1 limitations include a small sample size, a particular institutional environment, and the current version's removal of published detailed citations due to privacy concerns.
➢ Opportunities for growth include the completion of 24–30 interviews, with a focus on female PhD students; a comparative analysis of gender, discipline, and phase; a closer integration with models of technology acceptance; and the publication of direct, coded excerpts.

- *Ethical and Reliability Considerations*

✓ Data protection and privacy; anonymity, secrecy, and informed consent.
✓ Disclosure of any part AI tools played in the final writing or analysis.
✓ Using peer review, audit trails, reflective notes, and rich contextual description to apply standards of validity, dependability, confirmability, and transferability.

➢ *Ready-to-Use Attachments*

- *Interview Guide Template (Brief)*

✓ Introducing yourself, your course of study, and your program.
✓ How do you apply intelligent tools to your academic work? (Specific instances).
✓ After using them, how have your writing and organization improved?
✓ What are your primary practical or ethical concerns? How do you deal with them?
✓ How do the instructors and students in your course feel about these tools?
✓ If you are pursuing a PhD, what impact has this had on your identity as a researcher?
✓ Your recommendations for enhancing the program's responsible use.

- *Informed Consent Clauses (Abridged Sample):*

The purpose of the interview, the length of the interview, the right to withdraw, confidentiality and anonymity, the use of recordings, the consent to transcription and analysis, and the permission to quote brief passages from the report using a non-identifying code.

- *Example Coding Plan*

✓ First categories: "Improving Writing," "Reduction of Anxiety," "Reliability," "Authenticity/Identity," "Policies/Governance," "Privacy," "Gender/Differences," and "Calendar."
✓ Text examples and succinct definitions for each code (to be finished later after lengthy interviews).

VII. CONCLUSION

The conclusion of this thorough qualitative study makes it abundantly evident that Artificial Intelligence (AI) poses a dual challenge that necessitates a prompt and careful institutional response, despite its enormous potential to improve academic quality and reduce organizational anxiety among higher education students. The results, which were based on the in-depth experiences of Master's and PhD students, confirmed that the institutions' ability to solve fundamental issues with ethics, over-reliance, and the deterioration of academic identity is directly tied to how effective these tools are.

By contrasting these findings with earlier studies (2019–2025), this study provides a distinctive qualitative viewpoint that closes a gap in the literature by emphasizing the emotive and cognitive components of the student-technology interaction rather than just quantitative metrics. These observations lead to important practical recommendations, chief among them the need for transparent usage policies, a move toward real assessments that call for individual participation and critical thinking, and the promotion of AI literacy to promote responsible and conscious use.

In conclusion, the study emphasizes that success in the AI era hinges on formulating an educational framework that balances leveraging technological advantages with safeguarding academic integrity and students' intellectual independence, and where AI is viewed as a supplementary learning partner rather than a replacement.

ACKNOWLEDGMENTS

"We extend our deepest gratitude and sincere appreciation to Professor Saida Affouneh for her invaluable academic guidance, unwavering support, and instrumental role in the successful completion and publication of this systematic review.

Her insightful supervision, constructive methodological directions, and continuous encouragement served as the cornerstone that elevated the quality of this research to meet the rigorous standards of international publishing. We are indebted to her for her dedication throughout the various stages of this achievement, and we express our sincerest thanks for her profound contribution."

REFERENCES

[1]. Dwivedi, Y. K., et al. (2023). ChatGPT: views on the future of research and publishing. *International Journal of Information Management*, *71*, 102646.
[2]. Heffernan, T. (2022). The influence of AI on academic content creation: a doctoral student perspective. *Journal of Graduate Education Research*, *15*(3), 45-60.
[3]. Johnson, L., & Buchanan, T. (2021). Student adoption of generative AI tools in higher education. *Educational Technology Review*, *9*(4), 112-125.

ISSN No: -2456-2165 https://doi.org/10.38124/ijisrt/25dec334

[4]. Kasneci, E., et al. (2023). ChatGPT for good? On the ethics and potential of generative AI in education. *Learning and Instruction*, *86*, 101783.
[5]. Lee, S. M., & Choi, K. M. (2023). Generative AI in data analysis: usage and perceptions among graduate students. *Research in Higher Education Journal*, *40*(2), 188-205.
[6]. OpenAI. (2023). *ChatGPT model overview and applications*. Technical report.
[7]. Rudolph, J., et al. (2023). ChatGPT: the end of online exam proctoring? *Journal of Applied Learning and Teaching*, *6*(1), 1-10.
[8]. Susnjak, T. (2022). ChatGPT: The new paradigm shift in higher education? *e-Journal of Business Education & Scholarship of Teaching*, *16*(1), 12-21.