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A Comparative Study of Generative AI Tutors and Traditional Education: Evaluating Risks and Benefits for Postgraduate Learning at Riphah International University

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Abstract
Generative AI tutors, like ChatGPT, with traditional teaching at Riphah International University. Its expressions at how both approaches benefit postgraduate students in their education. The exploration demonstrates that AI tutors save time, give immediate response, and make learning extra flexible. Though, they can also give incorrect or frequent responses and absence emotional support. Traditional teaching aids students recognize better through teacher supervision, face-to-face communication, and inspiration, but it can be slower and less flexible. A assessment of MPhil students initiate that most liked AI tools for their comfort and effectiveness, though many still cherished traditional instruction for deeper understanding. The study accomplishes that the best consequences come when AI and teachers work calm, as AI should provision learning but not replace teachers.

Introduction

Education is rapidly evolving with the progress of technology, and one of the most effective tools is Generative AI (Anu et al., 2023). AI-powered tutors, like ChatGPT, are now capable of helping students by explaining detailed topics, generating study plans, and offering 24/7 learning guidance. These devices allow learners to study independently and access specialized content without direct teacher contribution. However, AI tutors have many pros and cons compared to traditional education**,** where teachers play a vital role in guiding students (Weitekamp et al., 2020). The rise of the internet and AI devices in the 21st century has changed language learning and teaching instructions to online and AI-powered platforms. Students now can study individually, anytime, and anywhere (Lucci et al., 2022). However, this shift increases concerns about the depth and quality of learning without

face-to-face involvement. The traditional education system has been an important process of learning for ages. Teachers give lessons, make a strong interaction with students, deliver lessons, and help the students to adopt important skills such as innovative ideas, critical thinking, and communication (Tucker, S., 2001). Teachers can completely perceive students' sentiments. They also give motivation to them and encourage them by teaching with a style that they can easily understand, and manage their teaching style based on specific needs that something AI tutors may struggle to do (Luckin et al., 2001). Generative AI improves education by modifying learning and enhancing involvement. It helps students create informative and innovative ideas and makes learning effective. In education, it helps them to summarize their topics and provides them with creative questions related to their topics (Kadaruddin, K., 2023). Generative AI, like ChatGPT, improves education by offering customized learning knowledge and a realistic virtual environment. However, it also assumes challenges, such as the risk of misleading information, ethical conflicts like misuse or partiality, data privacy issues, and over-reliance on technology, which can weaken students' analytical thinking abilities (Qadir, 2023; Boumov, 2008). Both methods have their risks and benefits. While AI tutors make learning easier and provide flexibility, at the same time, they can lead to a lack of emotional support and limit real-world experiences. Traditional education provides face-to-face interaction with teachers, which helps them to understand in a better way, but the method may not be useful and match with students' learning speed, making it less effective. The study aims to explore the strengths and limitations of both approaches in the context of postgraduate and M Phil students at Riphah International University. The goal is to investigate how AI can be efficiently combined into education without compromising the human elements crucial to learning. By analyzing these challenges, we can understand how to use AI in education while maintaining the beneficial factors of human teaching.

Problem Statement

As artificial intelligence (AI) changes the way we learn, universities are starting to see how it can help improve learning. But there is very little research on how well AI tutors work compared to regular teaching, especially for MPhil students. At Riphah International University, these students deal with issues like difficult subjects, limited time, and requiring individual support for research. AI tools can give instant help and save time, but they don't offer moral support, help with thinking thoroughly, or deal with ethical concerns. This study examines the real differences among AI and traditional teaching, how they impact student learning, and the teacher's role in handling both methods.

Significance of the study

This study is influential because it deals with a growing need to understand how Artificial Intelligence, particularly Generative AI tools like ChatGPT, can be combined effectively into higher education without replacing the fundamental role of teachers. As AI becomes more attainable and widely used, especially in language learning and scientific research, it is important to examine its effects on students' understanding, encouragement, and learning experience. By concentrating on postgraduate students in a real classroom setting, this research gives valuable insights into how AI tools can help challenging academic tasks, save time, and individualize learning, while also determining the limitations, such as reduced emotional assistance and possible over-dependence.

Objectives of the Study

1. To analyze the teaching techniques engaged by Generative AI tutors and traditional educators at the postgraduate level in Riphah International University.
2. To examine the impact of Generative AI and traditional techniques on students' learning outcomes, involvement, and academic performance.
3. To study the role of teachers in guiding, managing, and integrating both AI-based and

traditional learning settings.

Research Questions

1. What are the key differences between the teaching strategies of Generative AI tutors and traditional educators at the Postgraduate level in Riphah International University?
2. How does the difference in strategies between Generative AI tutors and traditional education influence students' learning at the Postgraduate level in Riphah International University?
3. What role do teachers play in controlling and managing AI-based learning and traditional classroom teaching?

Literature Review

Various research methodologies have been employed to examine the role of Generative AI in education, particularly in comparison with traditional methods. One study using thematic analysis and semi-structured interviews found that AI tools assist with lesson planning and provide continuous feedback, whereas traditional education sometimes lacks challenging content that upholds academic integrity. However, a key research gap identified was that initial language teacher education (ILTE) programs do not yet adequately address the advancements in AI, despite the growing demand for AI-related skills and knowledge in teaching (Maity et al., 2024). Another study adopted a quantitative experimental design, revealing that ChatGPT, when combined with expert tutors, offers detailed and objective feedback. While AI improves grading accuracy, ethical concerns persist regarding its potential for bias in assessments. The study emphasized that human input remains crucial to adjust for subjectivity and adapt grading to individual student needs (Awidi et al., 2024). A mixed-method approach further demonstrated the effectiveness of integrating traditional teaching methods with AI-supported assessments to enhance student feedback. Yet, there is a noticeable lack of research on the practical integration of AI in classroom assessments. The findings support the theme that AI can actively contribute to improved learning engagement and more targeted feedback (Pahi et al., 2024). In a survey-based research design, results showed that the combination of AI technologies and human interactions significantly contributes to effective learning through continuous iteration. Although AI facilitates learning, it was found to potentially impact students' creativity, emotional development, and critical thinking. Importantly, the research underlines that while AI tools are beneficial, they cannot fully replace human teachers (Chan et al., 2023). Lastly, another mixed-method research approach focused on features such as AI-powered course creation, interactive voice assistance, and chatbot integration. The findings suggested that generative AI holds the potential to revolutionize education by offering personalized and interactive tutoring systems. However, concerns regarding AI bias and data privacy were highlighted, emphasizing the need for careful implementation to maintain ethical standards (Banjade et al., 2024). The research on Generative AI in higher education has extended rapidly by emphasizing possibilities and difficulties. Building on the foundational studies already added and we incorporate additional scholarly works that enhance the understanding of AI's pedagogical value.

The organization of AI applications in education into five areas: describing and projection, intelligent educational systems, smart content, automatic operation of administrative tasks, and dynamic systems. This organization provides a wider framework for understanding where tools like ChatGPT fit within current teaching frameworks (Richter et al.,2019). By further analyzing how AI reforms teacher roles, advising that AI might gradually take over routine educational tasks, allowing teachers to focus on leadership, creativity, and emotional guidance. However, they are alert to the risk of job reduction of teachers if AI tools are applied without pedagogical training (Holmes et al., 2022). The author found in a comprehensive analysis that intelligent tutoring systems (ITS) produce important learning progress in controlled environments, particularly in STEM areas. The results support the efficiency of AI-based learning for postgraduate students in technical fields (Kulik and Fletcher, 2016). By analyzing the recent qualitative work, they examined postgraduate students' emotional

reactions to AI tutors by exposing uncertainty that students admired AI's efficiency but missed the social and moral support offered by human teachers (Tang et al.,2023).

Table 1: Conceptual Mapping of the study

Sr No.	Author & Year Publication	Research Methodology/Approach	Key Findings	Research Gaps	Themes
1.	**Maity & Deroy (2024)**	Thematic analysis/semi-structured interviews.	AI helps with planning lessons, and provides continuous feedback, and traditional education needs content that challenges academic integrity.	Initial language teacher education (ILTE) does not address AI advancement.	The growing influence of AI-related skills and knowledge.
2.	**Awidi & I. T. (2024)**	Quantitative Experimental Design.	ChatGPT, linked with expert tutors, provides detailed feedback that is strict and objective.	Ethical concerns on AI grading.	AI enhances grading accuracy and requires human input to address subjectivity and adaptation assessments.
3.	**Pahi et al (2024)**	Mixed-method approach.	Integration of traditional education and AI-based assessment to improve feedback Effectiveness.	Lack of research on integrating AI into classroom assessment.	AI collaboration on improving active learning and student feedback.
4.	**Chan et al (2023)**	Survey-Based Research Design,	Integration of AI and Human relations enhances effective learning and continuous iteration.	AI impacts students' creativity, critical thinking, and emotional development.	AI facilitates students but can't replace teachers.
5.	**Banjade et al (2024)**	Mixed-method research approach.	AI automatic course creation, Interactive feature voice, and Chatbot assistance.	AI Bias and Data Privacy.	**Generative AI can revolutionize education** by providing an interactive, AI-powered tutoring system that enhances personalized learning experiences.

Methodology

Theoretical Framework

The theoretical framework applied to this research is the Cognitive Load Theory by Sweller (1988). It is suggested that educational resources should be created to reduce unnecessary cognitive load, allowing learners to focus their restricted working memory resources on essential educational activities (Sweller et al., 1988). Instructional strategies derived from CLT include worked examples, discovery-based problems, and the cognitive distraction effect, all aimed at improving cognitive processing and refining schema acquisition. The theory differentiates between inherent**,** irrelevant**,** and applicable cognitive load. Generative AI devices like ChatGPT can reduce irrelevant load by providing instant clarification, reorganizing detailed information, and scaffolding learning, thus allowing students to focus on conceptual structuring (Sweller et al., 2011). For example, when postgraduate students use AI for thematic or pattern analysis, the AI might automate code generation, helping simplify the task and supporting the constructive cognitive effort. Furthermore, this research agrees with Vygotsky's Sociocultural Theory (Vygotsky, 1978), which reinforces the role of social interaction and framework in cognitive development. In this situation, traditional instructors act as facilitators within the Zone of Proximal Development (ZPD), leading students beyond their current level of ability. While AI offers individualized assistance, it lacks the social-affective flexibility of human interaction critical to cooperative learning and guidance. A supporting framework is Connectivism**,** developed by Siemens (2005), which is particularly relevant in the digital age. It proposes that learning occurs through networks and network points, emphasizing the value of AI as a connection in a broader knowledge network. In this regard, ChatGPT and similar tools are not just supplementary resources but part of an advancing ecosystem of knowledge creation. Thus, this study combines CLT, Sociocultural Theory, and Connectivism to explore both contextual and cognitive aspects of AI-assisted and traditional postgraduate education.

Research Design

This study has followed a quantitative paradigm to analyze what M Phil Linguistics students in Islamabad have felt about learning from traditional teaching methods compared to using Generative AI tools. The concentration has been on two topics in "Analytical Strategies in Linguistics Research"— thematic analysis and discourse analysis. Firstly, the students have been taught using traditional methods, and later introduced to Generative AI tools. The objective has been to observe how AI has support their understanding and efficiency in learning these analytical methods.

Survey Questions

A brief survey has also been conducted prior to compare students' experiences with the traditional method against the use of Generative AI tools. The respondent have reported based on their experience with both thematic and discourse analysis and have shown their strong confidence when applying thematic analysis through traditional learning methods. While AI-based analysis has been seen as more helpful, particularly for its time-saving capabilities and automated data creation with explanations—most issues have been raised regarding the reliability of AI-generated answers. Manual analysis has been preferred due to its perceived trustworthiness and much better understanding. The main challenge noted with the traditional method has been the potential bias, while AI tools have sometimes criticized for producing inaccurate results

Research Population / Sample

The population of the study has consisted of 38 students enrolled in the class. Yet, due to practical concerns, the survey has been conducted with 10 graduate-level (MPhil) Linguistics students, who have had some prior research experience, but have been unfamiliar with the studied thematic analysis

and discourse analysis in a formal way. These 10 participants have been chosen to provide insights representative of the broader student group.

Data Collection Method

Students have undergone two types of instructional sessions—In First semester they have been taught using traditional teaching method, and in second semester, they have been taught using AI-assisted learning. After comparing the results of both the methods, the students have been asked to fill out a short survey to share their preferences and learning experiences.

Instruments / Tools

Traditional instruction has included lectures, class discussions, and reading resources. Students have manually conduct thematic analysis using these resources. For the AI-supported method, tools like ChatGPT have been introduced to assist in identifying patterns, generating code, and suggesting themes. A survey (non-graded) has been used to collect feedback from students regarding their learning experience.

Data Analysis Techniques

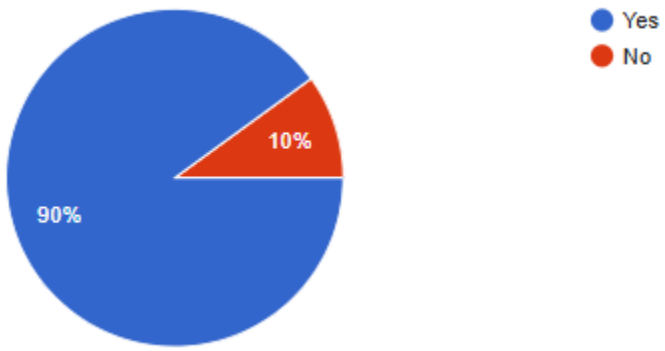
The survey responses have been collected and analyzed qualitatively. Researcher have identified common themes from the responses to determine what students have liked, find challenging, and how they have perceived the role of AI in enhancing their learning.

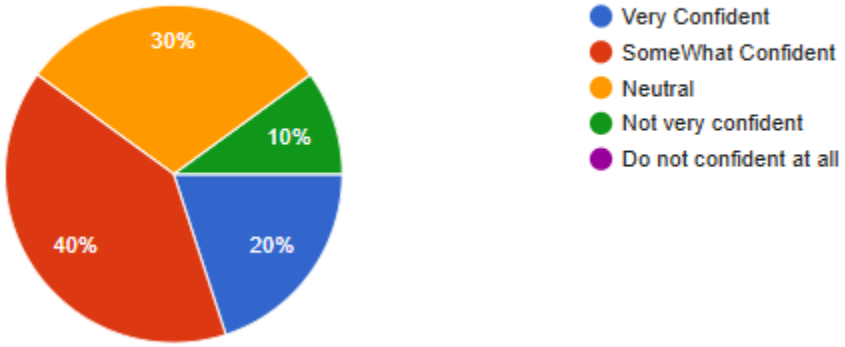
Delimitation

The study purposely involved only MPhil Linguistics students from Riphah International University to maintain an attentive and in-depth consideration of AI versus traditional teaching methods within a precise academic discipline. The study knowingly prioritized qualitative perceptions gathered through student surveys over quantitative performance data, as the primary aim was to explore learning experiences, preferences, and perceived benefits.

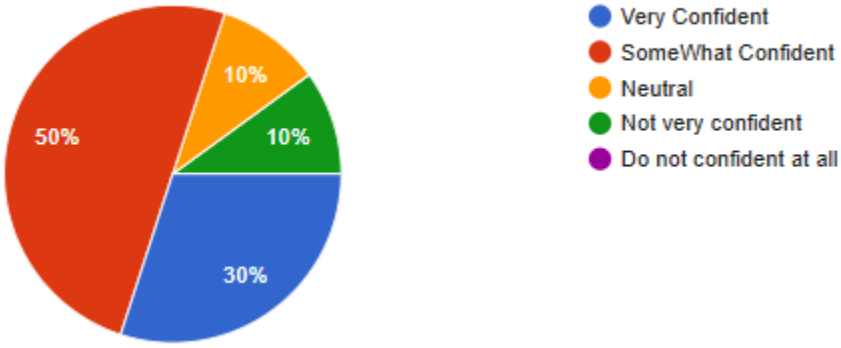
Results

The researcher conducted a pilot study in order to validate the questionnaire. A total of 10 participants were involved in this survey. The majority (90%) reported having previously studied thematic or discourse analysis in detail. When asked about their confidence in applying thematic analysis after traditional teaching, responses varied: 20% felt very confident, 40% somewhat confident, 30% neutral, and 10% not very confident.



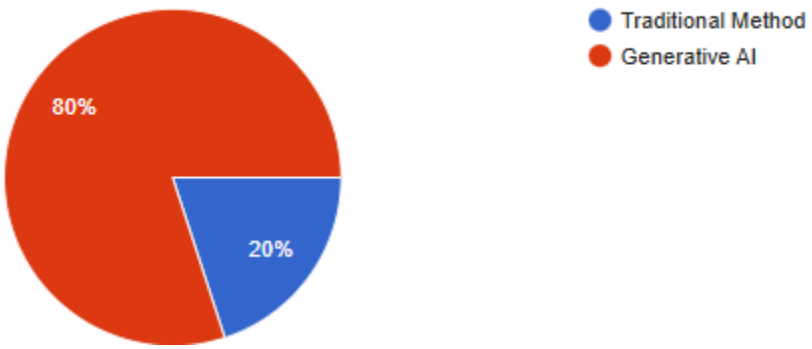


In contrast, when using Generative AI tools to assist with thematic analysis, 30% felt very confident, 50% somewhat confident, 10% neutral, and 10% not very confident. This suggests a generally positive attitude toward using AI, though not without reservations.



Participants identified several challenges with manual thematic analysis, including a lack of a clear framework, time consumption, difficulty in generating codes, and subjectivity. Some expressed concern about potential bias and the complexity of analyzing large data sets without technological assistance. Traditional learning was valued for its interactive elements, skill development, and opportunities for direct teacher-student engagement. Manual analysis was also appreciated for encouraging cognitive engagement and critical thinking. Regarding AI assistance, respondents noted benefits such as faster data processing, automatic generation of themes, detailed insights, and time savings. Nine out of ten participants agreed that AI helped save time during analysis. However, difficulties were also reported, including repetition of ideas, lack of understanding at the beginning, incorrect or undesired outputs, and unfamiliarity with effective AI prompts.

Interestingly, 80% of participants preferred using Generative AI tools over traditional methods. Reasons for this preference included ease of use, time efficiency, innovative features, and the ability to gain deeper insights. Still, some preferred traditional methods for their reliability and contextual understanding.



Additional comments emphasized the potential of AI in education, with suggestions to improve its usability, reduce repetitive content, and offer better guidance on effective usage.

Conclusion

This study analyzed Generative AI tutors with traditional teaching to see how each impacts postgraduate students' learning at Riphah International University. The results showed that both methods have unique strengths and some shortcomings. Generative AI tools, like ChatGPT, helped students by saving time, giving instant feedback, and making learning more adjustable. Students found AI helpful for tasks like thematic analysis, as it provided immediate ideas and saved effort. However, some students felt confused at first, and there were matters about incorrect or repeated answers. However, traditional teaching gave students better understanding through teacher assistance, face-to-face communication, and emotional support. It helped enhance critical thinking and deep learning, but it was sometimes seen as time-consuming and not always matching each student's temperament.

The study also emphasized that teachers play an essential role in both methods. In AI-based learning, they assist students on how to use the tools properly and correct any mistakes. In traditional classrooms, they encourage students, explain concepts clearly, and adjust teaching styles based on student needs. In conclusion, Generative AI can explore education if used carefully and together with traditional methods. The best findings come when AI is used to support learning, not replace teachers. By balancing both methods, we can make learning more effective, enjoyable, and suitable for students' needs in the modern times.

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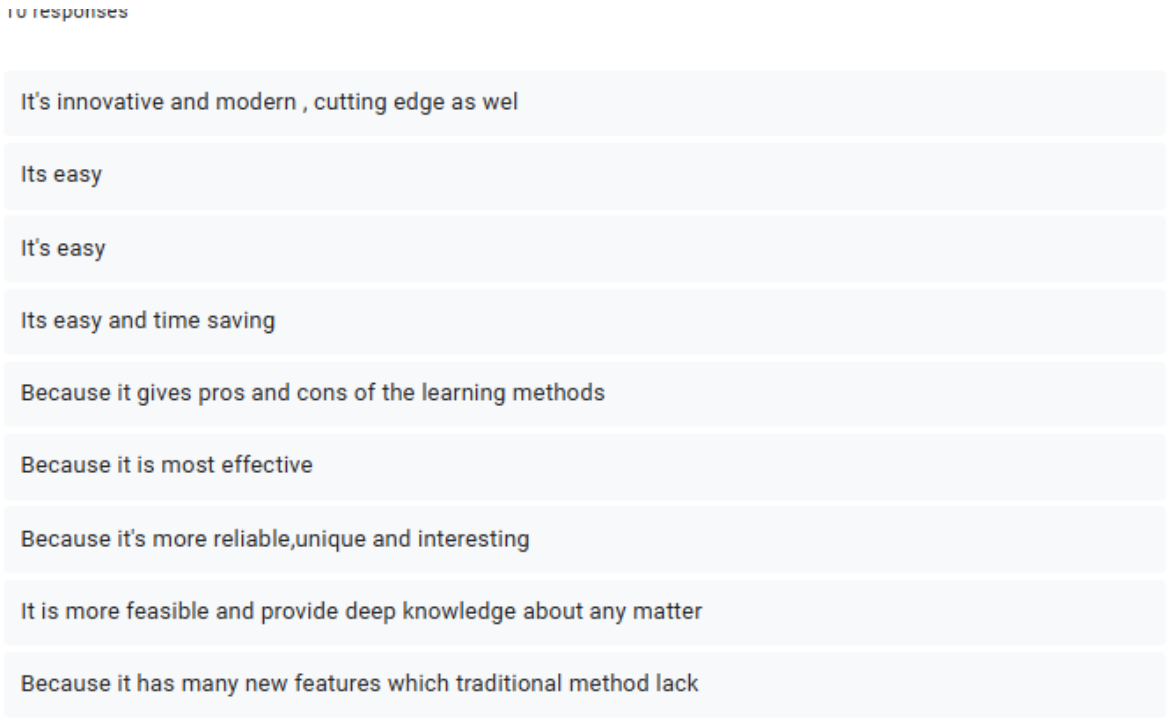
Appendix:



Not at all

repetition

Add

At start it was difficult to get and understand it

Not knowing about proper prompt

Some how because of repeated sentences

Repetition of ideas

Sometimes it don't provide the desired data

Lack of proper usage rules of using AI tools

What aspects of traditional learning did you find most helpful?

9 responses

Survey , interviews etc

Interactive

Surrounding

It have developed and improved our skills

Grammatical and vocabulary learning aspects

There should be face to face interaction between learners and teachers

Direct interaction with teacher

Analysing the text by using cognitive abilities.

doing it manually.

In what ways did AI tools assist you in analyzing the data?

9 responses

Helpful to clear ideas

References

Detailed answer

Have saved my time

Qualitatively and wuantitatively

Some how in data processing

It helps me in providing insight to my idea in more depth

Fast data categorization

the data generates automatically and an explanation is also attatched with it.