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ChatGPT in Pakistani Higher Education: Transforming Teaching, Learning, Assessment, Research, and Academic Ethics

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Abstract

The use of Artificial Intelligence (AI) in higher education in Pakistan has created both opportunities and concerns for educators, researchers, and policymakers. ChatGPT, a generative AI tool developed by OpenAI, can support teaching, learning, assessment, research, and academic work. This study examined how experienced academicians view its benefits, limitations, and ethical implications in Pakistani higher education. A qualitative exploratory design was used in this study. Twelve experienced academicians from different higher education institutions in Pakistan were selected purposively and interviewed through a semi-structured guide. The interviews were transcribed and analysed through familiarization, coding, development and review of themes. ChatGPT was used only to help organize provisional codes; the researchers checked its suggestions against the transcripts and made the final analytical decisions. Five themes were identified: teaching, learning, assessment, research, and ethics. Participants reported that ChatGPT supported lesson planning, content preparation, student engagement, idea generation, academic writing, and research productivity. They also noted that it enables students to understand difficult topics, improve their writing skills, and obtain immediate academic support. Main concerns were identified as plagiarism, over-reliance on AI-generated content, weaker critical thinking, and the absence of clear institutional policies. The findings show that ChatGPT may be useful in higher

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education when its use is guided by academic judgment and clear rules. Universities should redesign assessment, prepare ethical guidelines, train faculty, and strengthen AI literacy. The study offers practical information for teachers, administrators, and policymakers planning the responsible use of generative AI in Pakistan.

Keywords: ChatGPT, Generative AI, Higher Education, Teaching, Learning, Assessment, Research, Academic Ethics, Pakistan

Introduction

AI has become a key component of higher education institutions globally over the last few years and has transformed the learning, teaching, assessment, and research processes. Academic writing, content creation, tutoring and idea development are now made possible with generative AI tools such as ChatGPT which is created by OpenAI. This has presented opportunities and challenges particularly in the field of higher education, where there is not a uniform practice of digital transformation, such as in Pakistan.

However, Pakistan's HEIs have a number of enduring challenges, including low quality of teaching, lack of research output, high class sizes, poor academic support systems, and access to learning materials. In this context, ChatGPT becomes a new tool for academic support, and is now being employed by both students and teachers to clarify concepts, help with writing, organize lessons, and conduct research. This is a phenomenon that has resulted in significant issues regarding academic integrity, educational quality and institutional readiness.

However, the most recent research in different countries, like the USA, indicates that generative AI tools, when used appropriately, have the potential to enhance students' engagement, writing outcomes, and learning effectiveness. Kasneci et al. (2023) have mentioned some potential applications of LLMs in the educational sphere such as personalized learning, cognitive scaffolding, etc. Dwivedi et al. (2023) point out that ChatGPT has the potential to impact a variety of academic areas, such as curriculum development, assessment techniques, and research processes, and that it presents ethical and regulatory issues. Likewise, UNESCO (2023) notes that the application of AI in education, including the access to academic integrity, needs clear guidelines and regulations for transparency, fairness, and academic integrity.

The use of generative AI in higher education in Pakistan is in its infancy and many of the debates surrounding it have been focussed on issues arising from plagiarism and improper use of the technology than on structured and educational use. This is a substantial gap since, in the Pakistani universities, the usage of ChatGPT is slowly rising, but there is no policy or training. This

provides a blended environment for use of AI in the classroom, with high prevalence of use, and low prevalence of regulation.

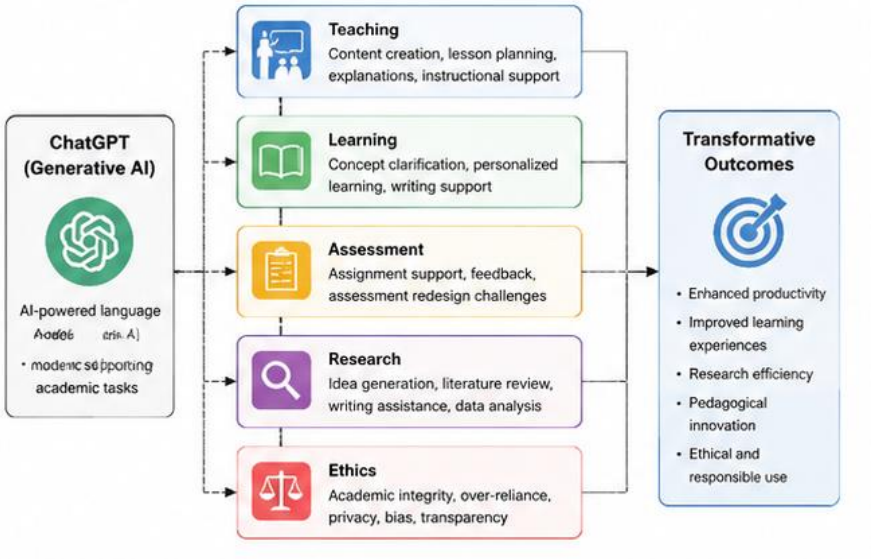


Figure 1. Conceptual Framework: The impact of ChatGPT as a transformative agent in Higher Education.

This study examined the role of ChatGPT in Pakistani higher education across four areas: teaching and learning, assessment, research, and academic ethics. It explored the experiences of academicians to understand perceived gains in productivity, the ethical concerns linked with its use, and the institutional responses required for responsible adoption.

LITERATURE REVIEW

1. Artificial Intelligence and Generative AI in Higher Education

AI in education has moved beyond rule-based systems to generative models that are able to produce human-like text, explanations, and feedback. Large language models are now used to help academic researchers write, tutor, summarise and create knowledge. ChatGPT is the most widely used example in higher education because it's easy to use and is conversational.

Kasneci et al. (2023) explain that large language models can support individual learning by providing explanations that are customized to students' needs and providing feedback as it happens. They point out their relevance in terms of cognitive support and particularly in SLL

contexts. Similarly, Dwivedi et al. (2023) argue that ChatGPT has revolutionized academic practice in teaching, research, and assessment, and has sparked concern regarding its accuracy, bias, and issues of academic integrity.
UNESCO (2023) argues generative AI should be used in education with an ethical approach with accountability, transparency and human oversight. This point of view sees AI as an educational aide rather than a teacher.

2. ChatGPT and Teaching Practices

The use of AI tools in higher education for lesson planning, instructional design, and content creation is increasingly commonplace. Teachers can use ChatGPT to create lecture content, provide examples and explain complicated concepts in a way that is accessible to different students.

Lo (2023) indicated that teachers at universities feel that ChatGPT can assist them in enhancing teaching efficiency, particularly in the creation of teaching materials and content. There were concerns, however, about teaching materials having less originality and a reliance on the outputs of these AI systems.

Likewise, Zhai (2023) states that AI tools could support pedagogical creativity, provided the teacher could mindfully control the content generated by the AI. The study emphasizes the significance of teacher digital literacy to the effective use of generative AI.

3. Student Learning; the ultimate goal

The use of ChatGPT has altered how students learn by offering instant explanations, summarizations, and assistance in writing. Students leverage it for clarifying concepts, creating assignments, and preparing for exams.
ChatGPT enhances student comprehension by providing tailored explanations and alleviating cognitive overload when dealing with complex subjects (Baidoo-Anu & Owusu Ansah, 2023). It also enables self-paced learning particularly in a resource poor setting.

But, there is evidence of the risks as well. Doing too much with generative AI may diminish critical thinking and problem-solving skills, as Sullivan et al. (2023) suggest. This creates a dilemma of making them easy to access, and easy to think about.

4. Assessment and AI: What's the connection?

Higher education is transforming assessment as a result of generative AI. Traditional written assignments, which can be used to create quality academic content, are being challenged by ChatGPT.
As pointed out by Cotton et al. (2023), AI tools make academic integrity enforcement more difficult, particularly in essay-based assessments. They suggest to redesign tasks to critical thinking, application and oral assessment.
Perkins (2023) proposed that to shift the universities from product to process based assessment, it is important to focus on learning progression rather than the final product. This minimizes the chances of submitting AI-generated articles.

5. Creating a map of the landscape of ongoing research

In the field of academic research, ChatGPT is becoming a popular tool for summarizing literature, generating ideas, providing code assistance, and drafting manuscripts. Researchers save time in information processing and writing.

Gao et al. (2023) point out that Using generative AI could be useful for early research development, for example, to come up with research hypotheses and develop conceptual models. They do warn, however, about inaccuracies in the facts and the reliability of the citations.
Gordijn and Have (2023) state that it is important to establish strict ethical boundaries for AI-assisted research, including transparency regarding AI's contribution to academic writing.

6. Academic Ethics and Institutional Challenges

It's not just about the potential pitfalls of using ChatGPT in education.The risks of ChatGPT in education are not the sole concerns. Issues are plagiarism, authorship, transparency and fairness.

UNESCO (2023) notes that universities face difficulty in setting and enforcing consistent rules for acceptable AI use, particularly in assessment. The absence of uniform guidance can lead to uneven practice across institutions.
UNESCO (2023) also highlights the importance of the need to establish institutional structures for the management of the application of AI and to promote digital competence and responsible innovation. Developing economies such as Pakistan face these challenges to a greater extent due to less developed policy environment and less availability of AI training.

7. Research Gap

The literature so far available is mainly concerned with global or developed education systems with scanty empirical evidence from Pakistan. Experienced teachers have limited knowledge about ChatGPT's qualitative understanding of its usage in the actual teaching context. Although some research studies focus on one or the other, few studies consider both technical potential and ethical risks in relation to teaching and learning, assessment, research and ethics in a single context.

Accordingly, the study aimed to explore academicians' perceptions of ChatGPT in teaching and learning, assessment, research, and academic ethics within Pakistani higher education.

METHODOLOGY

1. Research Design

The study used a qualitative exploratory design to examine academicians' experiences and perceptions of ChatGPT in Pakistani higher education. This design was appropriate because the use of generative AI in the local university context is still emerging and has limited organized empirical evidence.

2. Research Context

The study was carried out in higher education institutions in Pakistan. The academic context varies in digital access and teaching and research facilities across universities, making it suitable for examining how scholars adopt, understand, and critique ChatGPT.

3. Participants and Sampling

Twelve experienced academicians were selected through purposive sampling because the study required participants with direct knowledge of teaching and research in higher education. Eligibility required at least five years of university teaching, prior use of digital tools, and first-hand use of ChatGPT for teaching, assessment, or research. Given the focused topic, experienced participants, and detailed interviews, twelve cases were considered sufficient to obtain information-rich accounts across the academic positions and disciplines shown in Figure 2.

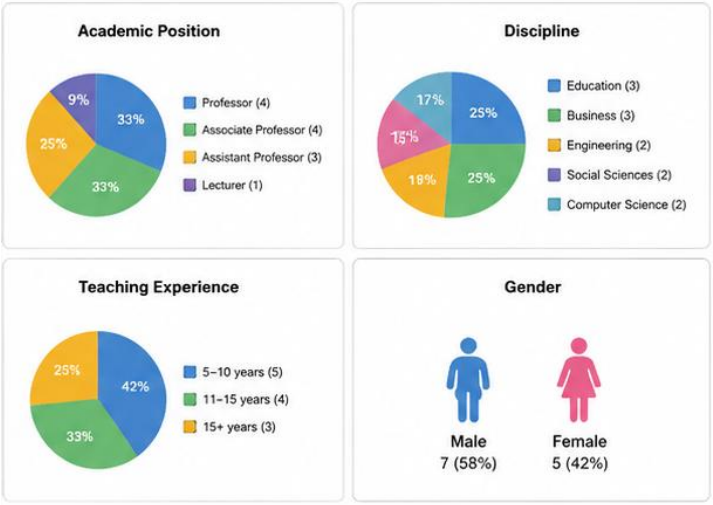


Figure 2. Participant Profile (N = 12)

4. Data Collection

Semi-structured interviews were used to gather data. This helped the participants to express their experiences, keeping focus in key areas of research. The questions asked in the interview were open-ended and included: ChatGPT in education, student learning behavior, issues with assessment, support in research, and ethics.

Interviews were conducted face-to-face or online according to participant availability and lasted 30–45 minutes. Responses were documented and transcribed with permission. The same interview guide was used in both modes, and follow-up questions were asked where clarification was needed; each transcript was checked for completeness before analysis.

5. Data Analysis

Interview data were analysed through thematic analysis in five stages: familiarization, initial coding, theme development, review, and definition. ChatGPT was used only as an aid for arranging provisional codes and grouping similar excerpts. The researchers compared all AI-assisted suggestions with the original transcripts and retained, revised, or rejected them before finalizing the themes.

The following five themes were identified in the study:

- Teaching
- Learning

- Assessment
- Research
- Ethics

The themes capture the multifaceted role of ChatGPT in a higher education context.

6. Trustworthiness of Data

Member checking was conducted by sharing summaries of the interpretations with selected participants. Consistent coding procedures and detailed descriptions of the participants and setting supported dependability and transferability. The research team jointly reviewed the code groupings, theme labels, and boundaries before the findings were reported.

7. Ethical Considerations

Ethical clearance for the study was obtained through the relevant institution's prescribed approval and consent procedure before data collection. Participants received an explanation of the study, gave informed consent, and were told that participation was voluntary and that they could withdraw. Names and other identifiers were removed from the transcripts, and the data were stored securely and accessed only by the researchers.

RESULTS AND DISCUSSION

1. Overview of Findings

Twelve academicians were interviewed and thematic analysis yielded 5 core themes: teaching, learning, assessment, research and ethics. These themes reveal that ChatGPT has an impact on the pedagogy and academic administration of HEIs in Pakistan. The findings are consistent with recent evidence from around the world, which suggests that generative AI has an impact on various layers of higher education systems (Dwivedi et al., 2023; Kasneci et al., 2023). The thematic map of findings is presented in Figure 3.

2. Theme 1: Teaching Transformation

Participants found that ChatGPT has the potential to assist in the teaching process by helping them create content quickly, prepare lectures, and simplify complex academic topics. Academicians referred to the less effort required in the preparation of slides, examples and explanation to a variety of students.

This trend is reflected in recent literature. Lo (2023) reiterates that teachers employ ChatGPT to create educational resources and boost their instructional effectiveness. Generative AI brings pedagogical flexibility, as long as teachers are in control of content validation, as explained by Zhai (2023). But, research also shows that there are risks of originality in the design of instruction and dependence on AI-generated materials (Dwivedi et al., 2023).

From the above results, it is seen that ChatGPT is offering a teaching support system instead of teaching judgment.

3. Theme 2: Student Learning Enhancement

The participants reported that ChatGPT's explanations, summaries, and writing assistance led to better student engagement and understanding. Students use ChatGPT to clarify concepts, plan activities and prepare for tests.

These observations are supported by earlier research. Baidoo-Anu and Owusu Ansah (2023) found that ChatGPT can support self-directed learning by improving understanding and reducing cognitive load. Kasneci et al. (2023) also describe the value of large language models for adaptive explanations and personalized learning pathways.

However, participants also raised concerns. Sullivan et al. (2023) highlight the risk that excessive reliance on generative AI may weaken critical thinking and independent reasoning. Similar dependency concerns have been noted in broader reviews of AI-assisted learning (Dwivedi et al., 2023).

4. Theme 3: Assessment Disruption and Redesign

There was a significant concern from academia regarding the effect of Chat GPT on conventional assessment styles, particularly essay questions. Some participants said it was challenging to differentiate between work created by students and AI.

In this regard, the results are consistent with Cotton et al. (2023) who argue that generative AI threatens the traditional validity of assessment in Higher Education. Perkins (2023) recommends moving away from traditional tests and toward process-based and application-focused assessments to mitigate the risk of AI abuse.

There are also recently emerging institutional responses that lean towards this direction. An increasing number of universities are changing the nature of their assessments from written product to critical thinking, oral evaluation and applied problem solving. (McDonald et al., 2024; Wang et al., 2023).

5. Theme 4: Research Productivity and Academic Writing Support

Participants reported that ChatGPT helps with summarizing literature, generating ideas, and academic writing. Improved speed and structure in writing tasks is most useful for early stage researchers.

This is consistent with the study by Gao et al. (2023), which shows that generative AI enhances conceptual development and initial research formulation. However, the concern is the potential for inaccuracies and an unreliable source of information for AI systems.

Gordijn and Have (2023) emphasize that transparency is crucial when employing AI for writing, ensuring academic integrity. Bozkurt et al. (2024) also propose the need for proper disclosure standards in the use of generative AI in research products.

Theme 5: Academic Ethics and Institutional Challenges

The most challenging were the ethical issues. The participants identified threats such as plagiarism, over-dependency of AI-generated text and the lack of institutional policies. The issues express doubt regarding the acceptable academic conduct in AI-assisted environments.

Such a concern is well founded, and is abundantly illustrated in the recent literature. The rise in opportunities for academic dishonesty is due, at least in part, to how easily generative AI can generate content, as well as the lack of detection systems, as outlined by Rasky (2024). Shishakly and Nachouki (2026) show that the ethical awareness and digital literacy have a significant impact on responsible use of AI among students.

Additionally, institutions are seeing the creation of AI policies and guidelines to address potential ethical issues while fostering innovation and research (McDonald et al., 2024; Wang et al., 2023). UNESCO (2023) emphasizes the need for governance frameworks focusing on transparency, accountability, and academic responsibility.

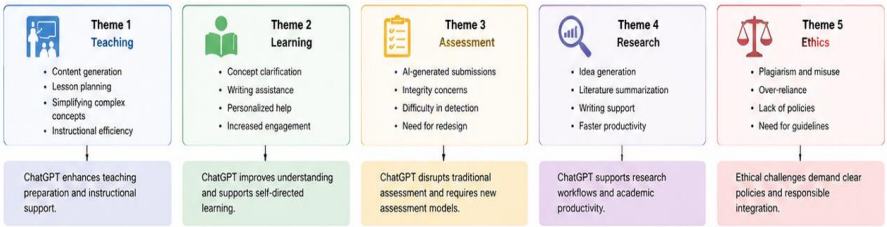


Figure 3. Thematic map of findings

6. Cross-Theme Integration

Across the themes, ChatGPT showed a dual effect: it improved efficiency in teaching, learning, and research, but also created concerns about academic integrity and dependence (Dwivedi et al., 2023).
This tension appears to be stronger in Pakistan as there is limited policy development in institutions, differential AI literacy of faculty and students. The perceived impact of ChatGPT is presented in Figure 4. The findings show that adoption is informal in nature and that it is up to each individual user to decide on his/her moral boundaries.

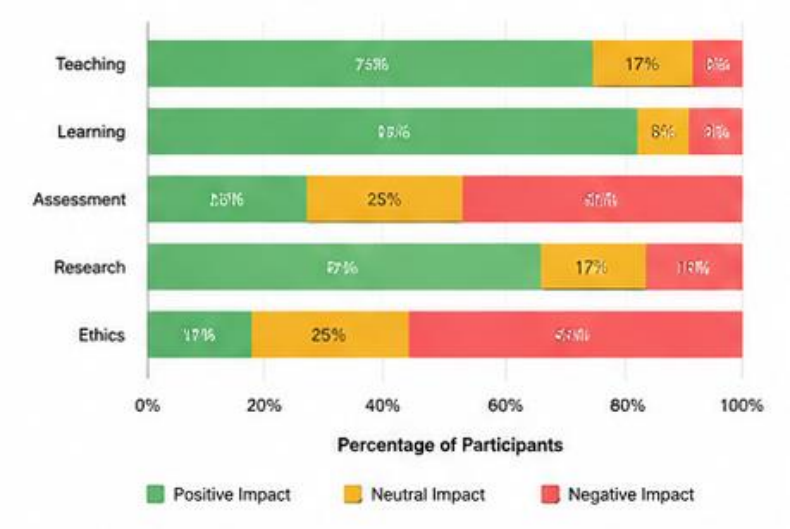


Figure 4. Perceived impact of ChatGPT across Academic Domains

7. Summary of Discussion

It is consistent with the observation that ChatGPT could be a game-changer in higher education, particularly improving productivity and accessibility. However, its integration poses concerns regarding assessment validity and academic ethics in the use of it. The results show that there is a need for university to shift towards using AI with a framework of AI governance, assessment redesign, and digital literacy.

CONCLUSIONS

The purpose of this study was to examine how ChatGPT is used in Pakistani higher education, with particular attention to teaching and learning, assessment, research, and academic integrity. The findings show that it can support teachers, students, and researchers, but its value depends on careful human judgment and responsible use.

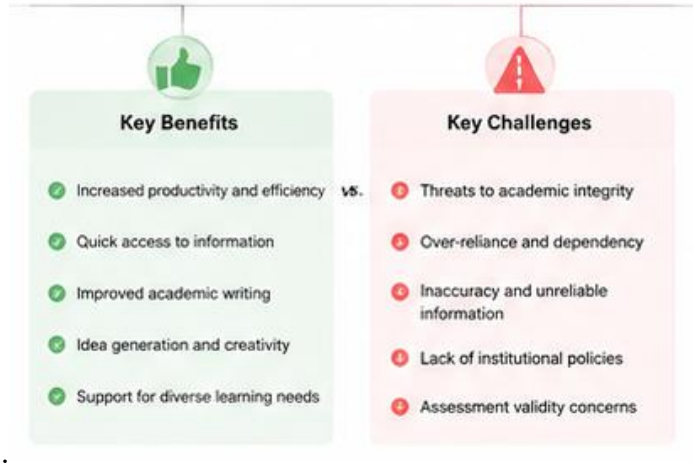


Figure 5. Key benefits and challenges identified

The study also shows that there are major problems as shown in figure 5. Validity of assessment practices is an issue with AI submissions. Given that generated content can be readily accessed, that can lead to a rise in academic integrity problems. The participants also refer to their dependence on AI tools, which have the potential to affect students' critical thinking and independent thinking skills. These are all issues that point to the fact that the promises of ChatGPT and institutional dangers go together.

The study confirms that implementation of generative AI in Higher Education Institutions of Pakistan is at the beginning level. The use of ChatGPT is still mostly informal and not regulated. This creates confusion in academic practices, and ethical uncertainty in students and teachers.

The study suggests implementing structured policies for the use of ChatGPT in higher education instead of unrestricting its use. There is a need for universities to establish clear guidelines on the use of AI tools in assignments, revision of assessment systems to focus on higher-order thinking skills, and provision of educational and training sessions to promote AI literacy among students and staff. . To ensure transparency, fairness and academic integrity, it is recommended that the use should be guided by ethical frameworks.



Figure 6. Stages of the use of ChatGPT in Higher Education with responsibility

The study therefore contributes significantly to the understanding of the impact of generative AI in the context of higher education in a developing country and the need to embrace a balanced approach to the use of generative AI.

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