

IMPACT OF CHATGPT ON ACADEMIC INTEGRITY AMONG YOUTH: MEDIATING ROLE OF CRITICAL THINKING

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ABSTRACT

The study aimed to check the association of ChatGPT use and critical thinking on academic integrity. The research design is cross-sectional correlational study to collect data from university students aged from 18 to 23 years old. The sample size was 600 students taken via purposive sampling from the University of Gujrat, Pakistan. Standardized psychological scales of ChatGPT usage scale, critical thinking evaluation scale, and academic integrity scales were used. Our findings showed that ChatGPT has no significant effect on academic integrity but has positive effect on critical thinking. While critical thinking has positive effect on academic integrity. It showed that ChatGPT doesn't directly change academic integrity, but it can boost critical thinking for students, and that improved critical thinking is what enhances academic integrity. Implications of the findings are discussed.

I. INTRODUCTION

Artificial intelligence has emerged for a while, but it receives so much attention than ever before. There are too many major brands in technology like google, Microsoft, meta but OpenAI was the groundbreaking invention that makes the people's especially students' life easier and discovering. In these inventions "ChatGPT" is a large language model (LLM) that has ability to make human like responses in every context (Haque, & Li, 2025). It can code software, compose poetry, summarize complex academic papers and generate any essay on any of the topic of demand with high capability of linguistic fluency. This unpredictable ability of ChatGPT led it to huge adoption rates; within at least 2 months of its launch, ChatGPT had gathered 100 million active users that make it the fastest-growing consumer application in history (Milmo, 2023). ChatGPT is the medium now a days in which the people find information according to their interests and find the required information, but it also lemmatizes the thinking pattern and other issues in the generation of new people especially students that make it there only source of learning. Since its 2022 launch, AI chatbots like ChatGPT stimulated interest in education, while risks about student's independent thoughts and language expression skills decline subsists, prohibiting the tools from academic institutions should not be answer (Dwivedi et al., 2023). However, students may utilize technologies like ChatGPT to cutoff essay completion, threatening the growth of important proficiency (Shrivastava, 2022). According to the advance use of ChatGPT for research in education, it is important to use this application that is ChatGPT to increase scientific language use, specifically text succinctness, English grammar precision and translation of language (Graf & Bernardi, 2023). While ChatGPT has potential to optimize instructions and research, it poses a variety of challenges such as allowing cheating in exams and homework, which puts student's problem-solving skills at risk. Also, ChatGPT generates text that looks like human text, so cheating can be difficult to find (Mosaiyebzadeh et al., 2023). Hence, academic integrity becomes a crucial variable to be investigated.

Bretag (2017) considered academic integrity an interdisciplinary concept that gives the basis for every aspect and all levels of education. The term raises strong emotions in teachers, researchers, and students, not least because it is usually connected with negative behaviors. A more established approach entails a focus on promoting the positive values of honesty, trust, fairness, respect, responsibility, and courage. Academic integrity is a set of values and practices that encourage us to act with honesty, trust, fairness, respect, and responsibility (TEQSA 2021). The fundamental values project aims to communicate academic integrity in a positive and practical way. Issues of academic dishonesty and integrity rise beyond the classroom to the in-situation (Alschuler & blimling, 1995; Kibler, 1993). Academic integrity is a main factor in the quality of education that presents honesty, trust, and ethical conduct. In today's growing world and in the era of AI it poses the significant challenge to educational ecosystem's ability to maintain academic integrity. AI helps students to complete academic tasks, and it also endangered the ethical concerns of academia (Balalle & Pannilage, 2025). Research investigates why students engage in unethical academic practices by using AI tools. Data was collected from university students by interviews and surveys. The findings concluded that unclear institutional policies, peer pressure, and easy access to technology increased the chances of academic dishonesty among students. The study concluded that universities need clear ethical guidelines regarding AI usage in education. When there are no proper academic policies regarding AI that encouragement of misuse of ChatGPT like tools among students raises (Miranda et al., 2026).

In context of higher education, ChatGPT has been employed for brainstorming research ideas, paraphrasing academic content, creating an outline, and even completing entire assignments. While some academics view it as a useful learning tool that can increase comprehension and productivity. According to the academicians, higher education institutions are progressively acknowledging the role of promoting critical thinking skills among students (Adah, 2021). Critical thinking (CT) and metacognition helps independent students to increase consciousness about their own cognitive processes and their self-regulation so that they can supervise their own learning and shift it to any field of their lives (Rivas, Saiz, & Ossa, 2022). A study conducted in 2025 shows that there are some various factors that help in the development of critical thinking skills in the students of higher education. According to this study, the factors that involve in the development of the critical thinking are biological factors (memory, attention, nutrition and physical activity), mental factors (cognitive biases, fear of ambiguity, and metacognition), sociocultural factors (diversity, inequality, and cultural norms), technological factors (ldigitalization, use of AI, and digital literacy), and educational factors (pedagogical strategies and team work) (Jaramillo Gómez et al., 2025). Not surprisingly, lack of clarity about the nature of critical thinking directs to disorientation about how good critical thinking could be assessed; assessment and evaluation of critical thinking have been bitterly neglected worldwide (Kennedy *et al.*, 1991). This was surprisingly findings, given that the courses in this area were an induction into a profession which values critical inquiry (Anderson *et al.*, 1997). These difficulties related to encouraging critical thinking are compounded by the current demands of education that together challenge the effective learning process. Therefore, new learning alternatives are created to encourage students' active behaviour and participation. Students can thus feel motivated and actively engaged in the learning process. CT effectiveness is intrinsic to students' motivation. To gain an in-depth understanding of the relationship between motivation and decision making, (Olivares et al., 2013) studied CT by applying the expectancy-value model, showing that the CT performance of students improves through motivational programmers. Similarly, it was found that discussion-based teaching enriches students' CT due to the exchange of agreements, disagreements, questions and answers.

II. METHOD

Participants

This present study design utilizes quantitative cross-sectional correlational research design to investigate the influence of ChatGPT usage on academic integrity in university students and to explore the mediation of the critical thinking evaluation. The study involves 600 students selected through purposive sampling technique including both males (n=300) and females (n=300) aged between 18 to 24 years. Inclusion criteria hold currently enrolled University students, who use the ChatGPT or other AI tools at least once in their academic career. Exclusion criteria exclude those individuals who did not have prior exposure to ChatGPT usage, those students that might have some intellectual disability, and those students who didn't complete the questionnaire.

Measures

Data was accumulated using a structured self-administered questionnaire. Participants were asked to complete the questionnaire either in print. It took approximately 15-20 minutes to complete all instruments. Demographic Sheet is developed to gather background information of the participants in the study. [I] ChatGPT Usage Scale measures opportunities and challenges. Responses were recorded on 5-point Likert scale ranging from 1=Strongly disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly agree Reliability was supported by Cronbach’s alpha 0.71 for the total scale predicting acceptable internal consistency along with stable test-retest result. The total score ranges from 12-60 where high score indicates stronger perception related to both the benefits and challenges of ChatGPT use in education (Taktak & Bafraali 2025). [II] Critical thinking skills were evaluated by Analytical abilities and Argumentative abilities, on the Critical Thinking Evaluation Scale. Reliability analysis explained high internal consistency with Cronbach’s alpha = 0.89 and overall greatest lower bound of 0.93 explaining excellence precision. The total score is calculated by summing all 17 items scored on 4-point Likert scale 1=strongly disagree 2=disagree 3=agree 4=strongly agree. Total obtained by summing up all items if score is high the high level of critical thinking indicates (Rodriguez-Rojas et al., 2024). [III] Academic Integrity Scale measures Honesty, Fairness, Respect, Trust, and Responsibility. The reliability of scale is strong with Cronbach’s alpha of 0.866 that shows good internal consistency. Construct validity was determined through factor analysis (KMO=0.92), and concurrent validity supported by significant correlation with optimism (r=0.694). Scale consists of 17 items measured on Likert scale (1-5) total score obtained by summing, higher score indicates higher academic integrity (Ramadani, 2018).

Procedure

Participants were approached in person for the purpose of collection of data. Researcher explained the study and its purpose, and participants received informed consent form. After giving consent participants completed the demographic form and research questionnaire. Estimated time for completion was 15-20 minutes. Completed data was collected and stored securely for analysis. Participants were informed of their rights regarding their withdrawal at any time during the process The study follows the ethical considerations. Participants were briefed and signed the consent form. Participation was entirely voluntary and withdrawal was allowed at any time. All information was treated confidentially, and no identifiable information was collected. Data was securely stored and solely used for academic purposes. The participants of the study have right to withdrawal from study without giving any reason at any time. The data was just used for academic purposes, not shared to any other unauthorized person for any reason. The study didn’t involve any physical or psychological harm. to the participant.

III. RESULTS

The analysis aimed to check the relation between ChatGPT, critical thinking and academic integrity among university students.

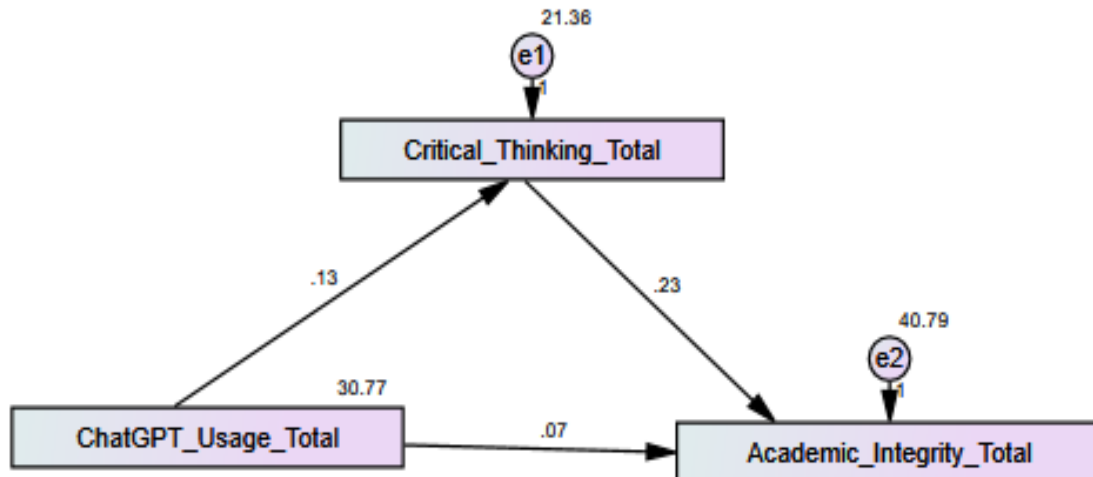
Table I: Descriptive Statistics and Correlation for Study Variables

Scales	M	SD	1	2	
1. CHATGPT	41.40	5.55	--		
2. Critical Thinking	50.02	4.67	.15**	--	
3. Academic Integrity	59.54	6.50	.10**	.20**	--

**p< .01

Descriptive statistics and bivariate correlation for all study variables are presented in table 1. Pearson Correlation analysis was conducted with N=600. The ChatGPT showed M=41.40 (±SD=5.4). For critical thinking, total scores M=50.02 (±SD=5.2). The academic integrity M=59.1 (±SD=6). Results indicated that CHATGPT usage was significantly and positively correlated with critical thinking (r=.20, p<.01) and with academic integrity (r=.10, p<.01). Critical Thinking was significantly and positively correlated with academic integrity (r=.17, p<.01).

Figure 1: Structure Equation Model with Path Analysis for Critical Thinking as Mediator between ChatGPT Usage and Academic Integrity among University Students



In figure 1, the results of the path analysis in structure equation model showed a non-significant direct association of the ChatGPT usage with the academic integrity ($\beta = .07$, $p = .15$) among the students. However, critical thinking fully mediated the association between ChatGPT usage and academic integrity ($\beta = .23$, $p < 0.001$) among students. Therefore, it is interpretable that the use of critical thinking skills strengthens the academic integrity by enhancing the positive use of the facilitation provided by ChatGPT in academic domain.

I. DISCUSSION

The study aimed to explore the relationship between ChatGPT use, critical thinking skills and academic integrity among university students. The present research aimed to check whether the ChatGPT and critical thinking skills both positively influence on the academic integrity among students, or ChatGPT have no influence on academic integrity or the critical thinking skills have positively influenced on academic integrity. H1 stated that there is significant relationship between ChatGPT use, critical thinking, and academic integrity among university students: The first hypothesis was supported as the results indicate a significant positive correlation between ChatGPT and critical thinking skills, indicating that students use ChatGPT information by using their critical thinking skills by evaluating and analyzing the information. The students at university show positive relations that mean they not just use ChatGPT to do assignments and academic tasks but also use it for enhancing their critical thinking skills in their academic tasks. The present results are consistent with the study by (Suriano et al., 2025), that investigates how students interact with AI chatbots like ChatGPT and the factors like attitude, trust, engagement, and knowledge about AI plays the role. The researchers found students' trust in AI. Eventually, engagement with AI influences critical thinking skills than simple knowledge of AI. The study suggests that AI chatbots can focus on the development of critical thinking skills but only when students are actively engaged and analyze information carefully rather than accept it without reflecting it.

The study relates in a way that proper use of ChatGPT may increase the critical thinking skills in students. The present results are consistent with previous studies (Nugroho & Trisusana, 2024; Syahsaputra, & Ni'matuzahroh, 2026) whose findings showed that many students use AI for writing assignments, understanding topics, summarizing information and generating ideas. Students believe that using AI for writing and help is acceptable but using it for completing assignments was disheartening and dishonesty. Therefore, they used their metacognitions to evaluate positive use of the AI tools. Another study examined how ChatGPT impacts secondary students' critical thinking skills by using survey-based quantitative approach. The data were collected from 300 students. The results show that most students believe that AI tools like ChatGPT improve their critical thinking skills as compared to those who haven't used it or used it often less. The research also found a positive relationship between ChatGPT use and critical thinking skills (Zafar et al., 2025).

H2 stated that critical thinking mediates the association between ChatGPT use and academic integrity. The results in figure 1 indicate that ChatGPT usage was not significantly associated with academic integrity ($\beta = .07$, $p = .15$), whereas critical thinking significantly and fully mediated the relationship between ChatGPT usage and academic integrity ($\beta = .23$, $p < .001$). Previous research suggests that students commonly use ChatGPT for brainstorming, paraphrasing, writing assistance, and information retrieval, but concerns remain regarding plagiarism, overreliance, and inaccurate references. Ethical and responsible use including transparency, source verification, proper citation, and plagiarism avoidance facilitate students to protect academic integrity (Kanashina, 2026; Shishakly, 2025). ChatGPT needs to be treated as a supportive learning tool in critical thinking rather than a replacement for students' own reasoning and academic work (Sallam, et al., 2024; Susnjak, 2023; Tlili, et al., 2023). The systematic review of literature showed how integrating AI technologies like ChatGPT can change practices of assessments. AI tools support learning, but at the same time they also challenge academic integrity, originality, and exploring students' original abilities. Traditional assessments approaches like essay writing are more vulnerable for generative AI misuse, which may push educators to think again about how students are being evaluated. The research also demonstrates using AI resistant methods like oral exams and multi-stage assessments is the better way to understand and measure critical thinking. It also explains the institutional policies and digital literacy practices to encourage the proper use of technology (Ncube et al., 2025).

II. CONCLUSION

The first limitation is that this study used self-report questionnaire and the second is the sample size. The sample size was small so can't generalize results this on the population and the self-report questionnaire might introduce biasness. The first strength of this research is that it added to existing literature and studied the interrelation between ChatGPT, academic integrity and critical thinking. The second strength of this study is that it only conducted in Western context, this study never happened before in Pakistan context. Future researchers will use longitudinal study design to see the impact of these variables over time. Future research will expand the sample size and replicate the study across multiple universities to improve generalizability of findings. In conclusion, this study provides evidence that ChatGPT, critical thinking and academic integrity among university students are strongly correlated with each other. The path analysis in structure equation model confirmed that ChatGPT is not directly influence on academic integrity but critical thinking has significantly positively mediated with ChatGPT and academic integrity.

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