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The Influence Of Chatgpt Usage On Critical Thinking Skills And Thesis Quality Among 2022 Cohort Islamic Religious Education (PAI) Students At STIT Al-Quraniyah, Manna, South Bengkulu

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Abstract

The development of artificial intelligence (AI) technology, particularly ChatGPT, has brought about changes in the learning process and the drafting of academic papers in higher education. The use of ChatGPT can assist students in gathering information, structuring outlines, developing ideas, and improving the quality of academic language. However, improper use also carries the potential to diminish critical thinking skills and reduce the originality of academic work. This study aims to analyze the impact of ChatGPT usage on the critical thinking skills and thesis quality of students in the Islamic Religious Education (PAI) Study Program, Class of 2022, at STIT Al-Quraniyah Manna, South Bengkulu. The study employs a quantitative approach using an ex post facto research design. The research population consists of PAI students from the Class of 2022 at STIT Al-Quraniyah Manna, South Bengkulu. Data collection was conducted using a questionnaire that had undergone validity and reliability testing. Data analysis included descriptive statistics, classical assumption tests, simple linear regression, t-tests, and the coefficient of determination. The results indicate that ChatGPT usage has a positive and significant effect on students' critical thinking skills, with a significance value of 0.000 (<0.05) and an influence contribution of 94.8%. Furthermore, ChatGPT usage also has a positive and significant effect on the quality of students' theses, with a significance value of 0.000 (<0.05) and an influence contribution of 94.7%. These findings demonstrate that the appropriate use of ChatGPT can serve as a supportive learning tool

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capable of enhancing critical thinking skills while facilitating the production of higher-quality theses. Nevertheless, its use requires supervision, information verification, and adherence to academic ethics to prevent dependency and avoid compromising the originality of academic work.

Keywords: ChatGPT, Artificial Intelligence, Critical Thinking Skills, Thesis Quality, PAI Students

INTRODUCTION

The evolution of information and communication technology in the digital era has transformed various aspects of human life, including higher education. Digital transformation has influenced not only learning processes but also how students access information, build knowledge, conduct research, and draft academic papers. The integration of digital technology into education has fostered innovations that enhance the effectiveness and efficiency of academic processes. One innovation that has expanded rapidly in recent years is the use of Artificial Intelligence (AI) technology to assist with various academic tasks ranging from information retrieval and data analysis to the drafting of scholarly manuscripts (Luckin & Holmes, 2022; UNESCO, 2023). Interest in AI development has surged following the introduction of Generative AI-based language models, such as ChatGPT, developed by OpenAI. ChatGPT leverages Natural Language Processing (NLP) and machine learning technologies to comprehend user prompts, analyze information, and generate text that closely resembles human language. These capabilities allow ChatGPT to serve as a virtual assistant for a wide range of academic activities, such as explaining concepts, outlining written work, suggesting alternative arguments, assisting with translation, correcting grammar, and providing feedback on academic writing (OpenAI, 2023; Kasneci et al., 2023).

The adoption of ChatGPT in higher education is expanding rapidly, as it offers students a convenient way to access information instantly. Students no longer rely solely on books, journals, or conventional search engines; instead, they utilize AI as a supplementary resource in their learning journey. Research indicates that generative AI can enhance study efficiency, accelerate academic writing, and help students grasp complex concepts through simplified, interactive explanations (Dwivedi et al., 2023; Tlili et al., 2023). Consequently, ChatGPT has shifted the educational paradigm toward a model that is more adaptive, personalized, and technology-driven. However, its use in academic settings also presents challenges. The ease of obtaining instant answers may diminish the independent knowledge exploration that students ought to undertake.

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Over-reliance on AI can erode critical thinking, analytical skills, creativity, and the ability to evaluate information objectively. Furthermore, using ChatGPT without verifying sources increases the risk of spreading inaccurate information, breaching academic ethics, and engaging in plagiarism all of which can compromise the quality of students' academic work (Cotton et al., 2023; Rudolph et al., 2023). Critical thinking is a core competency for 21st-century students. It encompasses not only the ability to comprehend information but also the capacity to analyze, evaluate, and interpret evidence, construct logical arguments, and make decisions based on reliable data (Facione, 2020). In higher education, critical thinking serves as the foundation for scientific research particularly during the thesis writing process, which requires students to identify research problems, formulate research questions, select appropriate methods, analyze data, and draw scientifically sound conclusions. For students in the Islamic Religious Education (PAI) program, these demands are even more complex. Students are required not only to master research methodology but also to be capable of integrating Islamic educational theories with various contemporary educational issues. Consequently, the preparation of a thesis demands a high level of critical thinking, enabling students to produce scholarly work that is systematic and objective, and which contributes to the advancement of the field of Islamic education (Azra, 2021).

From a pedagogical perspective, ChatGPT can be positioned as a cognitive scaffold a tool that supports the learning process without replacing the student's own thinking. When used appropriately, ChatGPT can help students gain an initial understanding of concepts, develop research ideas, broaden their perspectives, and enhance their ability to construct scholarly arguments. Thus, AI technology has the potential to serve as a learning companion that strengthens the learning process, provided it is utilized critically, reflectively, and responsibly (UNESCO, 2023; Kasneci et al., 2023). However, research also indicates that these benefits are only realized if students actively evaluate, verify, and reflect upon the information generated by the AI. Conversely, if ChatGPT is used merely to obtain instant answers without further analysis, the technology may actually hinder the development of critical thinking skills and diminish the quality of academic writing (Dwivedi et al., 2023; Cotton et al., 2023). Therefore, the use of ChatGPT in higher education must be understood not only in terms of its benefits but also regarding the accompanying academic and ethical challenges.

RESEARCH METHOD

This study employs a quantitative approach with an ex post facto design to analyze the impact of ChatGPT usage on the critical thinking skills and thesis quality of students in the Islamic

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Religious Education (PAI) study program. A quantitative approach was selected because the study aims to objectively examine the relationships between variables through statistical analysis based on numerical data obtained from respondents (Creswell & Creswell, 2018; Sugiyono, 2023). An ex post facto design was utilized because the independent variable ChatGPT usage occurred naturally without any intervention or manipulation by the researcher. Consequently, the study focuses on identifying causal relationships based on conditions that had already taken place among the research subjects (Kerlinger & Lee, 2000). The research was conducted at STIT Al-Quraniyah Manna, South Bengkulu Regency, Bengkulu Province. The research site was selected based on the academic consideration that students in the 2022 cohort of the Islamic Religious Education program had reached the stage of drafting proposals and theses thus, the use of artificial intelligence-based technology specifically ChatGPT was becoming increasingly prevalent in their academic writing processes. Furthermore, preliminary observations indicated variations in students' critical thinking skills and differences in thesis quality, making the subject worthy of empirical investigation. The study was carried out from March to April 2026, encompassing the stages of instrument preparation, data collection, data processing, statistical analysis, and report writing (Sugiyono, 2023).

The study population consists of all 31 students from the Islamic Religious Education Study Program, Class of 2022, at STIT Al-Quraniyah Manna, South Bengkulu. A population comprises the entire set of subjects possessing specific characteristics that serve as the target for generalizing research findings (Arikunto, 2021). Given the relatively small population size, this study employs a saturated sampling technique (total sampling), wherein the entire population serves as the research sample. This technique was selected because the entire population meets the characteristics relevant to the research objectives, thereby providing a more comprehensive overview of the relationships between the variables under study (Sugiyono, 2023). Consequently, the sample size in this study is identical to the population size: 31 students. This study involves one independent variable and two dependent variables. The independent variable is the use of ChatGPT (X), while the dependent variables consist of critical thinking skills (Y_1) and thesis quality (Y_2). The use of ChatGPT is defined as the extent to which students utilize the artificial intelligence-based application to support their academic activities specifically in seeking information, comprehending course material, structuring written work, developing arguments, and assisting in the thesis-writing process (OpenAI, 2023; Kasneci et al., 2023). This variable is measured through indicators such as frequency of use, purpose of use, and adherence to academic ethical principles when utilizing AI technology.

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Critical thinking ability is defined as a student's capacity to analyze information, evaluate evidence, identify problems, construct logical arguments, and draw conclusions based on valid data. This concept draws upon the critical thinking framework developed by Facione (2020), which encompasses the aspects of clarity, accuracy, precision, and relevance. These four indicators serve to measure the extent to which students engage in high-level thinking processes while producing their academic papers. Meanwhile, thesis quality refers to the standard of the student's academic work, assessed based on the fulfillment of academic standards during the thesis preparation process. Measuring thesis quality involves factors such as timely completion, thesis examination scores, and the alignment of the research topic with the field of Islamic Religious Education. These indicators were selected because they reflect the quality of both the process and the outcome of student academic work, consistent with their use in various studies evaluating the quality of final projects in higher education (Fraenkel et al., 2019).

All variables in the study were measured using a questionnaire employing a five-point Likert scale, ranging from strongly disagree (1) to strongly agree (5). The Likert scale was chosen for its ability to quantitatively measure respondents' attitudes, perceptions, and levels of agreement regarding each research indicator, thereby facilitating statistical analysis (Sekaran & Bougie, 2020). The collected data were subsequently analyzed to determine the magnitude of the impact of ChatGPT usage on the critical thinking abilities and thesis quality of students in the Islamic Religious Education Study Program at STIT Al-Quraniyah Manna, South Bengkulu.

RESULTS AND DISCUSSION

Research Results

This study aims to analyze the influence of ChatGPT usage on the critical thinking skills and thesis quality of students in the Islamic Religious Education (PAI) Study Program (Class of 2022) at STIT Al-Quraniyah Manna, South Bengkulu. The analysis was conducted on questionnaire data that had passed validity and reliability tests, followed by classical assumption tests and hypothesis testing using simple linear regression analysis. In general, descriptive analysis results indicate that the level of ChatGPT usage among students falls into the high category. Students utilize ChatGPT to seek initial references, draft research outlines, refine sentence structures, facilitate the understanding of theories, and generate alternative arguments for their theses. This situation demonstrates that the development of artificial intelligence technology has become an integral part of the students' academic process, particularly in the completion of their final projects. Meanwhile, the students' critical thinking skills also fall into the good category. Critical thinking

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indicators comprising clarity, accuracy, precision, and relevance show that the majority of students are capable of understanding research problems, identifying relevant information, and constructing arguments systematically. Similarly, the quality of the students' theses yielded good results, characterized by the correct structuring of the writing, appropriate research methodologies, and relatively high thesis examination scores. Prior to hypothesis testing, the research data underwent normality, homogeneity, and linearity tests. The test results indicate that the data are normally distributed, possess homogeneous variances, and exhibit linear relationships between variables, thereby meeting the requirements for simple linear regression analysis.

Hypothesis Testing Results

Hypothesis testing was conducted to determine whether the use of ChatGPT affects students' critical thinking skills

Table 1. Summary of Hypothesis Test Results

Variable	Sig.	R^2	Information
Use of ChatGPT → Critical Thinking Skills	0,000	0,948	Has a significant effect
Use of ChatGPT → Thesis Quality	0,000	0,947	Has a significant effect

The analysis results show a significance value of 0.000 (<0.05), leading to the acceptance of the research hypothesis. This indicates that the use of ChatGPT has a significant influence on students' critical thinking skills. The coefficient of determination (R^2 = 0.948) suggests that approximately 94.8% of the variation in students' critical thinking skills can be explained by the use of ChatGPT, while the remainder is influenced by factors outside the scope of this study. Furthermore, the analysis regarding thesis quality also yielded a significance value of 0.000 (<0.05) with an R^2 value of 0.947. This means that the use of ChatGPT contributes 94.7% to the improvement of students' thesis quality. These findings demonstrate that utilizing ChatGPT as an academic support tool enables students to compile academic papers in a more systematic, effective, and efficient manner.

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DISCUSSION

1. The Impact of ChatGPT Usage on Students' Critical Thinking Skills

The research results indicate that the use of ChatGPT has a positive and significant impact on students' critical thinking skills. These findings suggest that ChatGPT functions not merely as a source of information but also as a learning tool that helps students develop skills in analysis, evaluation, and the construction of scientific arguments. Students who utilize ChatGPT effectively find it easier to grasp complex concepts, develop research ideas, and structure their lines of reasoning more systematically. These findings align with research by Bawarta, Faradika, and Sari (2025), which states that ChatGPT, acting as a virtual tutor, can enhance students' critical thinking skills by providing information in a manner that is rapid, interactive, and adaptive. Similarly, research by Sariyati (2025) explains that using ChatGPT offers a more flexible learning experience, enabling students to explore knowledge independently with greater ease. However, the results also indicate that the impact of using ChatGPT must be balanced with the user's own critical thinking abilities. Students must still verify the information generated by ChatGPT, as artificial intelligence systems still have limitations in distinguishing between facts, opinions, and up to date information. This is consistent with the view of Zein (2023), who emphasizes that ChatGPT is a learning aid rather than a substitute for human critical thinking.

Research results indicate that the use of ChatGPT has a positive and significant impact on the critical thinking skills of students in the Islamic Religious Education (PAI) program (Class of 2022) at STIT Al-Quraniyah Manna, South Bengkulu. Hypothesis testing, yielding a significance value below 0.05, demonstrates that the more effectively ChatGPT is utilized in academic activities, the better students become at analyzing problems, evaluating information, and constructing scientific arguments. These findings reveal that artificial intelligence technology serves not merely as a source of information but also as a learning support tool capable of enhancing the quality of student thinking when used appropriately. During the thesis writing process, students utilize ChatGPT to help grasp theories, generate research ideas, develop conceptual frameworks, refine sentence structures, and find alternative solutions to various academic challenges. This accessibility makes it easier for students to understand material previously deemed difficult, thereby rendering the learning process more effective. Students are no longer solely reliant on printed books; instead, they can rapidly obtain additional explanations through AI-based technology.

The results of this study align with research by Bawarta, Faradika, and Sari (2025), which explains that ChatGPT, acting as a virtual tutor, enhances students' critical thinking skills by

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providing information that is rapid, interactive, and adaptive. Students who actively utilize ChatGPT demonstrate improved abilities in identifying problems, evaluating information, and formulating more logical solutions compared to those who do not use the technology. These findings are further supported by Sariyati (2025), whose research indicates that students generally hold a positive perception of ChatGPT, as it facilitates a deeper understanding of course material and boosts confidence in completing academic tasks. According to that study, students find it easier to develop ideas and broaden their perspectives when using ChatGPT as a study companion, provided that its use is accompanied by a process of analyzing and evaluating the information received.

Consistent with the views of Rudolph, Tan, and Tan (2023), ChatGPT represents an implementation of the Augmented Intelligence concept artificial intelligence designed to enhance human capabilities rather than replace them. In the context of higher education, ChatGPT serves as a cognitive scaffold, helping students grasp complex concepts through explanations that are simpler and easier to understand. Consequently, the use of ChatGPT can enhance learning effectiveness when employed as a tool to support the thinking process. Observations made during the study reveal that most students use ChatGPT as an initial step to gain an overview of a research topic before exploring other scholarly sources. This usage pattern indicates that students do not rely entirely on ChatGPT but rather use it to accelerate the information exploration process. After obtaining preliminary information, students continue to search for references in books, academic journals, and research articles, thereby ensuring that the arguments they construct are more comprehensive.

These findings support the view of Meihan, Sinurat, and Rukmana (2023) that ChatGPT can enhance learning effectiveness when used as a medium for knowledge exploration. Students with strong digital literacy skills tend to utilize ChatGPT more optimally than those who use the technology solely to obtain instant answers. Thus, critical thinking skills are influenced not only by the availability of technology but also by a student's ability to evaluate and process the information obtained. However, the research results also indicate that the excessive use of ChatGPT can lead to various negative consequences. Some students admitted that the ease of obtaining answers led them to put less effort into reading scholarly references in depth. If this pattern persists, analytical, synthesis, and evaluative skills may decline, as students become accustomed to receiving information without engaging in deep thought processes.

This view aligns with research by Yahya (2024), which explains that the use of ChatGPT in education must adhere to academic ethics. Students are not permitted to present ChatGPT

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outputs as scholarly work without verification, analysis, or further development. Irresponsible use risks leading to plagiarism, diminishing the originality of scholarly work, and hindering the development of students' critical thinking skills. Zein (2023) similarly notes that while ChatGPT can generate information rapidly, the technology has limitations in distinguishing between facts, opinions, and up to date information. Therefore, any information obtained via ChatGPT must be cross-verified using credible scholarly sources to ensure the quality of the academic work is maintained. From an Islamic educational perspective, the use of modern technology is part of leveraging scientific advancements to improve the quality of education. However, such usage must be grounded in values of honesty (ṣidq), trustworthiness (amanah), responsibility, and academic integrity. Students in Islamic Religious Education programs are expected not only to produce high-quality scholarly work but also to uphold the authenticity of that work as a way of implementing Islamic values within their academic activities.

Overall, the findings indicate that the use of ChatGPT significantly contributes to enhancing students' critical thinking skills when employed as a tool to support learning. Conversely, excessive use without accompanying analysis and verification can actually hinder the development of critical thinking skills and diminish the quality of the student learning process. Therefore, digital literacy, faculty guidance, and the establishment of ethical guidelines for the use of artificial intelligence in higher education are essential to ensure that ChatGPT truly benefits the quality of higher education.

2. The Influence of ChatGPT Usage on the Quality of Students' Undergraduate Theses

The research results indicate that the use of ChatGPT has a positive and significant impact on the quality of undergraduate theses produced by students of the Islamic Religious Education (PAI) Study Program, Class of 2022, at STIT Al-Quraniyah Manna, South Bengkulu. Regression analysis yielded a significance value of 0.000 (<0.05) and a coefficient of determination (R^2) of 0.947. These results demonstrate that ChatGPT usage contributes 94.7% to the quality of students' theses, while the remaining portion is influenced by factors not examined in this study. These findings indicate that the utilization of Artificial Intelligence (AI) technology can assist students in enhancing the quality of their academic writing, provided it is used appropriately and responsibly. In this study, thesis quality was measured using several indicators the accuracy of the writing structure, the suitability of the research topic, the appropriateness of the research methodology, the speed of thesis completion, and the final thesis examination grade. The analysis reveals that students who utilize ChatGPT proportionally tend to find it easier to draft the background of the

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problem, formulate research questions, identify relevant theories, and construct a systematic discussion compared to students who use ChatGPT to a limited extent.

The results of this study support the research by Handayani (2025), which states that ChatGPT can assist students in searching for scientific information, drafting research outlines, summarizing references, and refining academic language structure. These capabilities make the thesis-writing process more effective, as students gain an initial overview of the subject matter before conducting in-depth literature searches. These findings also align with the research of Mairisiska and Qadariah (2023), which explains that students view ChatGPT as an educational technology innovation capable of enhancing learning effectiveness and aiding in the completion of academic assignments. ChatGPT facilitates rapid information retrieval, allowing students to save time during the literature exploration phase and focus more on developing their research analysis. Furthermore, research by Meihan, Sinurat, and Rukmana (2023) indicates that using ChatGPT in learning can boost student productivity by helping them locate preliminary references, develop research ideas, and structure academic papers more systematically. This is consistent with the results of the present study, which show that students are able to complete their theses more efficiently after utilizing ChatGPT as a tool to support their learning.

Field observations indicate that the majority of students utilize ChatGPT for tasks ranging from generating alternative research titles, drafting background sections, and refining academic sentence structures to translating foreign literature and obtaining examples of thesis formatting. This convenience positively impacts the academic writing process, as students no longer struggle to get started a common issue prior to the widespread adoption of AI technology. However, the study also reveals that using ChatGPT without a verification process can compromise the quality of academic work. Some students tend to accept ChatGPT's output without verifying the underlying scholarly sources. This practice risks producing discussions that are generic, lack depth, or even contain inaccurate information. Consequently, the ability to evaluate information is a crucial factor in determining the quality of the resulting thesis.

These findings support Yahya's (2024) view that the use of ChatGPT in academic writing must adhere to academic ethics. ChatGPT serves merely as an aid; students remain responsible for analyzing, synthesizing, and interpreting the information obtained. Directly using AI output without further development can diminish the work's originality and potentially violate academic ethics. Research by Saragih (2025) similarly notes that while ChatGPT offers significant benefits for completing academic assignments, it also creates challenges regarding technological dependency. Such dependency can stifle creativity, independent thinking, and the ability to

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construct scholarly arguments if students cease the practice of conducting in-depth literature reviews.

Furthermore, Zein (2023) explains that information generated by ChatGPT is not always accurate, as it originates from diverse data sources that are not necessarily fully validated. Consequently, students must still verify information using scholarly journals, academic books, or other primary sources to ensure their theses meet scientific standards. From a higher education perspective, ChatGPT should be viewed as a learning companion rather than a substitute for the academic process. This technology can accelerate learning, enhance the efficiency of academic writing, and assist students in grasping complex concepts. However, the quality of a thesis is not determined solely by technological sophistication; it also depends on the student's ability to conduct critical analysis, integrate theory with research data, and construct arguments based on scientific evidence.

For the Islamic Religious Education study program, these research findings have significant implications for the development of digital technology-based learning. Lecturers need to provide guidance on the ethical use of Artificial Intelligence by establishing guidelines for using ChatGPT in academic writing. Such guidance aims to enable students to utilize AI as a learning aid without compromising their critical thinking skills, creativity, or academic integrity. Overall, the study confirms that ChatGPT significantly influences the quality of student theses. However, these benefits can only be realized if students use ChatGPT wisely, verify all information, and prioritize academic honesty throughout the writing process. Thus, ChatGPT can serve as a learning innovation that supports the enhancement of higher education quality while producing graduates who are adaptable to technological advancements without disregarding academic values and scholarly ethics.

CONCLUSION

The research results indicate that the use of ChatGPT has a positive and significant impact on the critical thinking skills of students in the Islamic Religious Education (PAI) Study Program (Class of 2022) at STIT Al-Quraniyah Manna, South Bengkulu. A significance value of 0.000 (<0.05) and a coefficient of determination (R^2) of 0.948 demonstrate that ChatGPT usage contributes 94.8% to the improvement of students' critical thinking skills. These findings suggest that the appropriate use of ChatGPT can assist students in analyzing information, evaluating various sources, constructing scholarly arguments, and developing a more effective understanding of learning materials. Furthermore, the use of ChatGPT has a positive and significant impact on the

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quality of students' theses, with a significance value of 0.000 (<0.05) and a coefficient of determination (R^2) of 0.947. This indicates that ChatGPT supports students in structuring more systematic scholarly works, accelerating the writing process, developing research ideas, and enhancing the quality of academic language. However, the use of ChatGPT must be accompanied by the verification of information sources, the exercise of critical thinking, and adherence to academic ethics to avoid dependency or the compromise of the work's originality. Based on these findings, higher education institutions need to formulate guidelines for the use of Artificial Intelligence in learning and academic writing. Lecturers are also expected to provide guidance to students so that ChatGPT serves as a supportive learning tool that enhances academic quality without undermining integrity, scientific honesty, or critical thinking skills.

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