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Influence The Use of Artificial Intelligence (AI) Against Ability Think Critical Accounting Education Study Program Students State University of Medan

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Abstract

This study aims to examine the effect of Artificial Intelligence (AI), particularly ChatGPT, use on the critical thinking skills of students in the Accounting Education Study Program at Universitas Negeri Medan. This study employed a quantitative approach with a correlational research design and simple linear regression analysis. The population consisted of 308 active students from the 2022–2025 cohorts, with a sample of 116 students from the 2025 cohort selected using random sampling. Data were collected through a closed-ended questionnaire using a three-point Likert scale, consisting of 24 items measuring AI use and 24 items measuring critical thinking skills. The research instrument was tested for validity and reliability, and all items were found to be valid and reliable. The results showed that AI use had a positive and statistically significant effect on students' critical thinking skills. This was indicated by a calculated t-value of 6.581, which was greater than the critical t-value of 1.658 at the 5% significance level. The resulting regression equation was Y = 29.027 + 0.496X, with a coefficient of determination of 27.5%. This indicates that AI use explained 27.5% of the variance in students' critical thinking skills, while the remaining 72.5% was influenced by other factors beyond the scope of this study. Based on the categorization results, the majority of students were classified in the moderate category for both AI use (64.66%) and critical thinking skills (65.52%). Therefore, students' use of ChatGPT can be considered relatively adequate but still needs to be optimized to support the development of their critical thinking skills.

Keywords:
Artificial Intelligence, ChatGPT, Critical Thinking Ability

INTRODUCTION

Development technology moment This bring up A technology called Artificial Intelligence or Intelligence Artificially capable interesting attention society. Artificial Intelligence or Intelligence Artificial is A the concept where the machine / electronics own ability for do usual tasks need intelligence human. AI can help and replace intelligence man in various form, such as virtual assistant, data analyzer, creator prediction complex as well as other things that make things easier and replace them intelligence human. It also has potential big For increase productivity, efficiency and quality life humans (Vinuesa et al., 2020). However, it is necessary noticed in a way careful when use technology This Because there is problem ethics, privacy and security along with profit the.

Development technology this is very influential development education, especially education at college high. Generation moment This must utilize progress digital technology that has impact and influence life everyday (Sugiono, 2024). The technology in question among them that is technology intelligence artificial or Artificial Intelligence (AI).

According to Echo (2022), Artificial Intelligence (AI) or Intelligence Artificial This is A system that shows behavior in demand intelligent in reach something objective certain, the application of which in the form of a stand -alone computer program Alone or embedded in something device hard that has utility certain. Intelligence This is one of the revolution Industry 4.0. Revolution Industry 4.0 is revolution technology that changes all activity man in scale, breadth, complexity and transformation (George et al., 2024).

The development of AI in Indonesia has experience very rapid increase because AI already implemented in all aspect life humans, such as economics, business, social, health, and especially education (Supriyadi et al., 2025). Many of circles students, teachers and staff education other use AI features for help they Study teach including data analysis, development ability cognitive and online learning. In fact, many application made for increase knowledge, improve skills, and improve ability brain man.

One of form technology intelligence the current creation This experience significant and popular progress is Chat GPT (Generative Pre-trained Transformer). ChatGPT released on November 30, 2022 and was first developed by a the company called with OpenAI in the United States., since released ChatGPT become application with popularity highest in history. In January 2023 it was recorded users active reach 100 million users. ChatGPT (Generative Pre-Trained Transformer) is intelligence artificial language models developed by Open AI that can produce text or similar sound with human. Its use in the world of education give potential great benefits, such as increase student engagement, increasing experience learn and improve method teaching (Liu et al., 2023). ChatGPT Keep going get attention bigger and bigger Lots used by students including students. The emergence and development technology like ChatGPT give benefits, challenges and pressures new in the world of education.

With presence ChatGPT Lots students who use application This as alternative in finish A tasks given by educators. Even Lots very students who also use ChatGPT This for finish A task even thesis for task end they. This is cause problems in the realm education, because power educators who feel that ChatGPT This is a threatening and destructive AI competence academic students good at school or college high. Because the answers given by ChatGPT This can seen as answers given by humans (Saúde et al., 2024). This can cause impact negative for students, one of them is decline ability think critical student.

One of necessary impacts noticed is possibility decline ability think critical students due to ChatGPT can interpret and execute conversation in Language natural human being. Laziness student in think is common problems faced in college high and can influence results learning, academic achievement, up to ability reasoning and cognitive student

According to Saraswati et al (Hentzen et al., 2022) the use of ChatGPT for student can result in increasing level laziness think in a way critical student in learning based on several aspects. First, availability ChatGPT as source fast and easy information can make student So lazy to read. Second, dependence on ChatGPT For answer question can hinder development skills solution problems and thinking critical students. Third, the inadequacy supervision and control in use ChatGPT can make student tend abuse technology This For exploit convenience in do task academic.

In a way simple, AI offers Lots benefit for students, but There is some people are worried about the existence of AI. The advantages This rather causing students too rely on AI rather than ability they Alone If That excessive, students will too rely on AI to finish task. so that ability students and desires they For Study can decreased, causing laziness. In the discussion on "Advantages and Disadvantages of Artificial Intelligence", Nikita Duggal from 2023 said that one of the weakness of AI is makes people lazy to think. He say that because AI has ability For take over task routine and boring, people become lazy to think (Jakhar & Kaur, 2020).

Use of AI or Intelligence Made by students including Students of the Accounting Education Study Program, State University of Medan with objective outline that is as improvement quality in field academic, but in utilization of AI of course bring up influence to think critical its users.

Ability think critical is one of the competence important things to do owned students in the 21st century. Ability This necessary for students capable analyze information, evaluate various arguments, identifying problems, and take decision in a way logical and rational. In the world of education height, ability think critical become base for student for understand draft in a way deep, complete complex problems, as well as produce solutions that can accountable.

Think critical is a thinking process intellectual Where thinker use reflective, independent, clear and rational thinking. Thinking critical covers skills in interpret, assess observation, information and argumentation. Thinking critical push a individual for can compare, classify, provide reasons, creation planning or other things in activity everyday that needs it. Think critical need effort continously For analyze and review beliefs, knowledge held, and conclusions made, with use supporting evidence. Thinking critical influenced by 4 factors in the form of interpretation or interpretation, analysis or examination, evaluation or assessment and conference or invention solution (Rane et al., 2024).

Think in a way critical means think in a way wide and open with consider possibilities until get something facts and information that can accepted or rejected. Someone who thinks critical will capable finish problem with systematization abstract thinking Then put it together in method effective solution. Using ability think strong criticism allows We For evaluate arguments and worthy For acceptance based on his thoughts (Woschank et al., 2020).

In context use technology like ChatGPT This Of course cause influence positive and influence negative to ability think critical. Use ChatGPT it's very easy used Because only with open the ChatGPT website, then enter questions that will be submitted with quick ChatGPT will respond and provide answer for question said. ChatGPT give access instant to information from

various sources that can help student in gather relevant information for analyze topic certain, as well as can for expand view they for get A idea new.

However with all convenience mentioned, the use of ChatGPT This Can just cause risk dependence when too technology dependent This For answer question or solve problems that can cause lost or lower ability think in a way critical. With thus influence Use ChatGPT to ability think critical student can varies depending on the method its use (Soori et al., 2023).

Based on observation the beginning that has been done researchers, found that part big student specifically Accounting Education study program students has use technology Artificial Intelligence (AI) or Intelligence Artificial, one of them is ChatGPT, which is used for do task, search reference, search title research, even look for answer in a way instant. On the side other views a lecturer to student Now with former students there is difference, where student Formerly known active emit his opinion in a way critical whereas student Now tend depending on the resulting technology answer or opinions expressed No from his thoughts alone. Of course This cause A question to ability think a students, are can increase ability think critical or even on the contrary, lowering ability think students, in particular students of the Accounting Education study program (Lawson et al., 2014).

Based on background back above researchers interested for do study with title " Influence Use Intelligence Artificial to Ability Think Critical Accounting Education Study Program Student, State University of Medan".

METHOD

Research methods used is method approach quantitative. This research done with see phenomena that occur and analyze them use approach descriptive and explanatory about existing objects and their results is numbers. Positivism underlying study quantitative, which is used for investigate population or sample. through use instrument research and analysis of collected data. This research use method correlation for determine whether There is or No connection between two variables influence test (simple linear regression) was used in study this. Test the influence used For know How influence something variables to variables other (Campbell et al., 2022).

This research implemented at Medan State University, especially at the Faculty of Economics. Research will carry out after do proposal seminar stages and has get permission study from party certain during not enough more One month duration or adapt with existing situations and conditions field as well as need study other during the research process ongoing.

Data analysis is method for manage data that has been obtained with test the data, with matter This so researchers must know the analysis test pattern used. The data analysis technique used in study This is as following:

RESULTS AND DISCUSSION

The research instrument that will be tested on Unimed Accounting Education study program students batch 2025, first through the instrument trial stage conducted on students with a total of 116 students. The trial was conducted to determine the validity and reliability of the questionnaire on the use of *Artificial Intelligence* and the questionnaire on students' critical thinking skills. The instrument validity test was carried out using the product moment correlation method and the reliability test was carried out using Cronbach Alpha, the test will be carried out with SPSS 30.

The validity of this research questionnaire was tested using the Pearson product-moment correlation technique. Validity is determined if the calculated r value is greater than the table r value. This test used data from 116 respondents. Given df = N-2 = 114 and a significance level of 5%, the table r value is 0.182 (Sari et al., 2026).

Next, the total number of valid statements in *the Artificial Intelligence (AI)* and critical thinking skills questionnaires were tested for reliability. Using the Conbrach Alpha formula, the test is considered reliable if it produces a Conbrach Alpha (α) value of >0.6 (Thayyib et al., 2023).

Based on calculations with the help of the SPSS program, the Conbrach Alpha for each question is >0.60, which is 0.851 for variable X, so it can be concluded that each question item is stated as reliable. Furthermore, testing is also carried out on variable Y. Based on the results of the reliability test above, it can be seen that all items in the critical thinking ability variable, which totals 13 items, have a Cronbach's Alpha of 0.833.

Hypothesis Testing

Simple Linear Regression Test a

Simple linear regression analysis is used to determine the effect of independent variables on the dependent variable, or in other words, how much influence the independent variables have on the dependent variable.

Table 1. Simple Linear Regression Test Results

Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	29,027	4,320		6,720	0.000
	Use of AI	0.496	0.075	0.525	6,581	0.000

a. Dependent Variable: Critical Thinking Skills

Based on the table, the simple linear regression equation is obtained as follows: Y = 29.027 + 0.496X. The regression coefficient value (b) is 0.496 and is positive, indicating that every one unit increase in the AI Utilization score will increase students' Critical Thinking Skills by 0.496 units (Ocak et al., 2022).

The results of the significance test through the t test show a calculated t value of 6.58 with a significance value of 0.000. Because the calculated t value (6.58) is greater than the t table at degrees of freedom (df) = 114 and a significance level of 5%, and the significance value (0.000) is less than 0.05, it can be concluded that the regression coefficient is statistically significant. Thus, it can be concluded that the Use of Artificial Intelligence (X) has a positive and significant effect on the Critical Thinking Ability of Students (Y) of the Accounting Education Study Program, batch 2025, Unimed (Gupta et al., 2021).

Coefficient of Determination Test

The coefficient of determination test is a test used to determine the percentage of influence of the Use of *Artificial Intelligence variable* on the critical thinking skills of students in the Accounting Education study program at Stambuk 2025 Unimed. The magnitude of the coefficient of determination in the study can be seen in the following table:

Table 2. Results of the Determination Coefficient Test

Model Summary

Model	R	R Square	Adjusted Square	RStandard Error of the Estimate
1	.525 [a]	0.275	0.269	6,838

a. Predictors: (Constant), Use of AI

Based on the table, the correlation coefficient (R) value is 0.525, which indicates that there is a fairly strong relationship between the AI Utilization variable (X) and the Critical Thinking Ability variable (Y). The determination coefficient (R Square) value of 0.275 indicates that the Artificial Intelligence Utilization variable contributes or influences 27.5% to students' Critical Thinking Ability, while the remaining 72.5% is influenced by other factors not examined in this study.

Discussion of Research Results

The Use of *Artificial Intelligence* (Chatgpt) in Accounting Education Study Program Students of the 2025 Unimed Stambuk

Based on the data categorization results, the majority of students fell into the moderate category for both the AI Usage (64.66%) and Critical Thinking Skills (65.52%). This indicates that the utilization of *Artificial Intelligence* by Accounting Education students is quite good, but there is still room for improvement to optimize its impact on critical thinking skills (Arifin, 2020).

These results indicate that students of the Accounting Education Study Program, Stambuk 2025, Unimed, generally have recognized and utilized AI, specifically ChatGPT, as a tool in academic activities, for example, to find references for lecture materials, help understand complex accounting concepts, develop assignment frameworks, or obtain alternative explanations for a problem. However, the dominance of the moderate category indicates that students' use of ChatGPT has not been maximized and in-depth, but rather remains reasonable or limited to practical daily needs.

The Effect of *Artificial Intelligence* (Chatgpt) on Critical Thinking Skills of Accounting Education Students, Stambuk 2025, Unimed

The results of hypothesis testing through simple linear regression analysis indicate that the use of *Artificial Intelligence* (ChatGPT) has a positive and significant effect on the critical thinking skills of students of the Accounting Education Study Program, Stambuk 2025 Unimed. This is evidenced by the regression equation Y = 29.027 + 0.496X, a calculated t value of 6.58 with a significance of 0.000 (<0.05), and a calculated F value of 43.31 with a significance of 0.000 (<0.05).

The positive direction of the regression coefficient indicates that the higher the intensity and quality of ChatGPT use by students, the more their critical thinking skills tend to increase.

Through the results of the coefficient of determination test, it shows that the use of ChatGPT only contributes 27.5% to students' critical thinking skills, while the remaining 72.5% is influenced by other factors outside this study, this means that the use of ChatGPT is not the only determining factor in critical thinking skills, but rather one of the supporting factors that needs to be balanced with students' critical attitudes in using it (Yasin et al., 2019).

Therefore, the findings of positive and significant influence in this study need to be interpreted as an opportunity as well as a challenge as a means of supporting the development of critical thinking skills, and a challenge to ensure its use is carried out wisely, reflectively, and not just for instant purposes.

The results of this study are in line with research conducted by Maulidah Amalia Putri and Lifa Farida Panduwinata (Ofianto et al., 2022) which concluded that the use of Artificial Intelligence (AI) has a positive and significant influence on students' critical thinking, especially in preparing students with relevant skills through personalized and adaptive learning experiences. Furthermore, this research aligns with the findings of Harmilawati et al. (2024), which showed that AI plays a significant role in developing students' critical thinking skills by recommending learning materials tailored to individual needs .

The positive impact of ChatGPT on students' critical thinking skills can be explained through several mechanisms. First, ChatGPT provides broad and rapid access to information, encouraging students to critically analyze, evaluate, and filter information. When students obtain answers from ChatGPT, they are indirectly required to verify the accuracy of the information with other sources, which is part of the critical thinking process. Second, interaction with ChatGPT stimulates students to ask more in-depth follow-up questions, thus practicing their analyzing and evaluating skills *as* outlined *in* Bloom's Taxonomy, which serves as the grand theory of this research (Suriansyah & Agusta, 2021).

Third, ChatGPT provides space for students to create *new* ideas and work by utilizing the information obtained as a basis, as long as students do not simply copy the answers provided by ChatGPT. Fourth, using ChatGPT in a structured and guided learning context can increase motivation and student activeness in the learning process, which ultimately contributes to improving critical thinking skills (Hariadi et al., 2021).

However, it should be noted that the influence of ChatGPT use on students' critical thinking skills is not absolute (Kania et al., 2023). As stated by Amalia et al. (2025), excessive reliance on AI can hinder students' independent thinking and creativity. Maulana et al. (2024) also found that the influence of AI on students' critical thinking was only 56%, indicating that other factors still influence critical thinking skills (Işıklar & Öztürk, 2022). This is consistent with the findings of this study, which showed that 72.8% of students' critical thinking skills were influenced by factors outside of ChatGPT use.

CONCLUSION

Based on the research results above, the following conclusions can be drawn: There is an influence of the use of *artificial intelligence,* especially ChatGPT, on the critical thinking skills of accounting education students in the 2025 semester. The majority of students in the Accounting Education Study Program, Medan State University, graduating in the 2022–2025 intake, actively use ChatGPT in their academic activities. This indicates that ChatGPT-based artificial intelligence

technology has become an integral part of students' academic lives, primarily used to assist with assignments, search for references, and obtain information quickly and instantly. The use of ChatGPT has a positive and significant effect on the critical thinking skills of students in the Accounting Education Study Program at Medan State University. The effect is moderate, with most variations in students' critical thinking skills still influenced by factors other than ChatGPT use, such as learning motivation, learning methods, and the academic environment. Therefore, hypothesis H1 is accepted and H0 is rejected.

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