

## The Effect of Using (AI) ChatGPT Version 4.0 on Reducing the Curiosity of Junior High School Students in Bangkalan

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**Abstract** – This study aims to explore the effect of using artificial intelligence (AI) technology, specifically ChatGPT, on the curiosity of junior high school students in Bangkalan Regency. The method used was a quantitative approach with a descriptive design, where data was collected through a questionnaire distributed to students. The results showed that although the majority of students had a good understanding of the benefits of AI technology, they tended to rely on instant answers provided by ChatGPT, resulting in decreased motivation to seek information independently. The average score of students' curiosity was recorded at 80, 4%, indicating a level that is still classified as "Not Good". This finding confirms the need for innovative learning strategies to utilize AI technology without reducing students' interest in exploration. This research contributes significantly to the understanding of the impact of AI technology in education and is relevant in the global context of the challenges of technology dependency among the younger generation. The results and recommendations of this study are expected to assist educators and policy makers in optimizing the use of AI in the learning process.

**Keywords:** artificial intelligence, ChatGPT, students, curiosity.

### Introduction

Artificial intelligence (AI) is another term for artificial intelligence in the form of computer systems that can perform tasks that usually require human skills and abilities (Hapsari *et al.*, 2024). Artificial intelligence is field of computer science that aims to create systems that can perform activities such as voice recognition, image, language understanding, and decision making that usually require human intelligence. One AI technology platform that is attracting attention is ChatGPT, which is known for its ability to automatically generate text and respond to various questions. ChatGPT can provide convenience in the world of education, especially for students in completing academic assignments that are given in the form of solving problems quickly (Priowirjanto *et al.*, 2023). However, it also leads to an increase in plagiarism or academic laziness, where students do not develop their curiosity. ChatGPT is able to provide answers that are on-demand, well-organized, and can even generate relevant journals or articles. Another advanced capability of ChatGPT is that it can serve as an assistant in the learning process (Milda, 2024).

In education, artificial intelligence (AI) has significant positive and negative impacts. Research shows that artificial intelligence (AI) can improve learning efficiency by personalizing materials according to students' individual needs, making the learning experience more adaptive. AI-powered systems are able to provide immediate feedback to students, allowing them to immediately correct mistakes and improve their understanding (Arnadi, Aslan, & Vandika, 2024). The use of artificial intelligence (AI), specifically ChatGPT, in education has shown great potential in improving student engagement. ChatGPT, as an AI language model capable of generating content and providing responses similar to human conversation, is now widely implemented in classrooms and educational institutions around

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the world. Studies show that the use of ChatGPT can significantly contribute to the learning process, by facilitating more dynamic interactions and increasing student motivation (Siswanto *et al.*, 2024).

While the benefits are clear, the research also noted challenges associated with implementing this technology, such as resistance to changes in teaching methods and the need for thoughtful integration in the curriculum. Findings from various studies suggest that while ChatGPT can enrich students' learning experiences, its success depends largely on how it is implemented in education and how educators and students adapt to its use. Therefore, the integration of ChatGPT in education has great potential to transform the learning system, although it must be balanced with attention to the challenges that arise (Jindal *et al.*, 2023). Overall, the integration of technologies such as ChatGPT in education provides great opportunities for the modernization of learning, but requires special attention to proper supervision and training so that the benefits can be maximized for students (Fathun *et al.*, 2023).

Artificial intelligence (AI) technology has negative impacts, such as potential misuse of technology. For students, this technology triggers laziness and narrow-mindedness due to dependence on AI. The use of AI is more often chosen to solve problems than to think for themselves and broaden their horizons. The use of AI on social media also reinforces bad behavior, such as cyberbullying. AI users, including teenagers, need to understand the advantages and limitations of this technology and use it wisely and responsibly (Mashlahah & Arifin, 2023). ChatGPT has some weaknesses. One of the weaknesses is the limited understanding that is not comparable to the human ability to seek valid information from various sources. ChatGPT is only able to provide responses based on questions asked by users. This feature still requires human supervision and intervention even though it can provide answers according to user needs (Jumriah *et al.*, 2024). Muarifin (2024) stated that in the era of artificial intelligence (AI), education is undergoing major changes. This technology changes learning and teaching methods and affects the moral values taught in education. Morality in education includes ethics, social responsibility, student character development and curiosity. The increasing use of AI in education raises concerns that these moral values may be overlooked or diminished. Most agreed that ChatGPT influenced critical thinking skills in exploring further information (Jindal *et al.*, 2023). Junior high school students use ChatGPT for its ability to provide quick and structured answers, thus fulfilling their curiosity on various topics. In addition, ChatGPT trains students' independence in digging for information independently, supporting the paradigm of active learning (student-centered learning). It also facilitates access to information without time and space constraints, allowing students to learn anytime and anywhere. The appeal of new technologies such as ChatGPT that are currently popular also makes students interested in trying them out. However, the importance of supervision is emphasized to prevent misuse, such as cheating or relying too much on AI without actively learning (Marcellino *et al.*, 2024).

Artificial intelligence (AI) has great potential to transform the education system to be more adaptive and personalized. In order to maximize its positive impact, the application of AI in education requires careful preparation, such as policy development, teacher training, and provision of infrastructure and equitable access. Various recommendations have been formulated to optimize the application of AI in personalized learning, involving policy makers, schools, teachers, and technology providers. AI-based learning should support a personalized approach, allowing students to learn according to their individual needs and pace. Continuous training programs for teachers need to be provided so that they can master the use of AI technologies, including the operation of AI platforms, data analysis, and integration of AI with traditional teaching methods. AI can accelerate the learning process, but the development of student skills such as curiosity, collaboration and creativity remains a priority. Teachers need to encourage students not to rely entirely on technology, but also to develop self-learning and creative problem-solving skills. Student engagement in learning, both through AI technology and conventional methods, should be continuously improved by teachers and educational institutions. The combination of digital approaches and hands-on interaction can create a more balanced and holistic learning experience (Widodo *et al.*, 2024). The use of artificial intelligence (AI) should be limited to specific tasks that do not require creativity and critical thinking. AI should ideally

be utilized for administrative work or data analysis, while tasks that require critical thinking should be done manually. The implementation of project-based learning methods is necessary to encourage students to develop curiosity and problem-solving skills. Such projects require original thinking and teamwork, which can reduce students' dependence on AI. Regular evaluation of the effectiveness and impact of AI in education is essential. Feedback from teachers and students is a key tool in assessing the implementation of AI while adjusting policies to suit the needs (Fitri & Dilia, 2024).

The problems that have been described based on several sources that say that there is a negative influence of AI on student curiosity, which causes researchers to examine how the influence of AI, especially ChatGPT, on reducing student curiosity at SMPN Kabupaten Bangkalan. The impact of the use of AI in middle school children if not balanced with adequate learning strategies will cause students to tend to be passive in receiving information as it is without knowing the truth. The role of an educator in this case is very important in order to use AI, namely ChatGPT, as well as possible. The researcher will later examine these influences and will ensure that the use of this technology is able to support the learning process of students without inhibiting thinking activities towards students' curiosity. This study provides valuable insights into the effect of using ChatGPT version 4.0 at the junior high school level in Bangkalan, but there are some limitations that need to be noted. One of the main limitations is the relatively narrow scope of the study, limited to one particular region and age group. This specificity can indeed be a strength in providing an in-depth picture of the local context, but it also limits the generalizability of the research results. To improve external validity, further research could consider a broader scope by involving students from different regions, different educational levels, and more diverse cultural backgrounds. By doing so, the results will be more representative and provide a more comprehensive understanding of how ChatGPT influences curiosity across different educational contexts.

### Method

This research uses a quantitative method with a descriptive approach. This approach was chosen to objectively measure the effect of using ChatGPT on the curiosity of junior high school students in Bangkalan Regency. This method focuses on collecting data based on actions and opinions to accurately describe the phenomenon, without making further interpretations. Descriptive research aims to identify and document the ongoing condition of the phenomenon. This approach is designed to provide a detailed description of events, individuals, or specific situations (Rasyid *et al.*, 2021).

This study aims to analyze the impact of using ChatGPT on the curiosity of junior high school students in Bangkalan Regency. A quantitative survey method was applied involving approximately 100 respondents from junior high school students in the region. The research instrument used was a closed questionnaire with a Likert scale, which contained 45 statements related to the use of ChatGPT to measure students' curiosity before and after use.

Data collection was conducted through a four-day online survey in January 2025. The Likert scale used has a value range of 1 to 4 (1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree), which is designed to measure students' attitudes, opinions, and perceptions. Researchers used the error rate formulated by Isaac and Michael according to Syaputra (2022) to determine the sample size with the random sampling method. The random sampling method is a sample selection technique where each individual in the population has an equal chance of being selected. This method is the basis of a variety of sampling techniques that are more complex and are often used in research. This approach is effective when data on all members of the population is completely available (Syaputra, 2022), considering an error rate of 1%, 5%, 10%. Given the large population involved in this study, the researcher decided to use an error rate of 10%, to calculate the sample size. This questionnaire method was chosen to ensure that the data generated is valid and reliable (Santika *et al.*, 2023). The data were analyzed by processing the results of the questionnaire or questionnaire using Microsoft Excel, using the Likert scale calculation method (Yani *et al.*, 2024).

Category Option	Score
Strongly Agree (SS)	4
Agree (S)	3
Disagree (TS)	2
Strongly Disagree (STS)	1

The questionnaire that has been carried out is continued with data calculation using the Likert scale method. The calculation is done with the following formula:

Likert Scale Formula:  $T \times P_n$

Determining the interpretation results requires calculating the highest score and lowest score first using the following formula:

Highest Score = Likert Highest Score x Number of Respondents

Lowest Score = Likert Lowest Score x Number of Respondents

The assessment of the respondent's interpretation of this study is the result of the resulting value calculated again using the index % formula with the following formula.

Index % Formula =  $\text{Total Score} / X \times 100$

The next stage is pre-solution, where before calculating the index%, it is necessary to determine the interval or distance and percentage interpretation to determine the assessment. The determination is made by the interval method (I) percent score using the following formula.

Interval Formula =  $\text{Number of Respondents} / \text{score (Likert)}$ .

Descriptive quantitative research requires the number of respondents which depends on the population size, sampling technique, and research objectives. In a small population, the number of respondents can be the entire population (saturated sample) to obtain accurate data (Permatasari, Fitriana, S., & Ariswati 2024). Under certain conditions, a purposive sampling approach can also be used by involving respondents according to the research criteria, although the number is smaller, such as 22 respondents (Maharani *et al.*, 2024). However, for larger populations, a larger number of respondents, for example 310 people, is needed to increase the validity of the results through descriptive statistical analysis (Suryanto, Anggraen, E.D., & Majidah, 2024). Thus, the number of respondents is highly dependent on the research context, but the larger the sample, the more representative the results. In general, there are two categories of samples: probability samples (random sampling) and non-probability samples (non-random sampling), each with various sampling techniques. One of the techniques in probability sampling is Simple Random Sampling, where every member of the population has an equal chance of being selected. To avoid bias, sampling is done randomly without considering strata in the population, and this method is suitable for homogeneous populations. This sampling technique can be done through a lottery technique or using a random number table available in a statistics book (Wahab & Junaedi, 2022).

The flow of distributing questionnaires starts with research planning by determining the research objectives and hypotheses to be tested and identifying the population and samples to be studied. Questionnaire design by developing a questionnaire with relevant and clear questions and using Likert scales or other types of questions suitable for measuring the variables under study. Testing the questionnaire by conducting a pilot test on a small group of respondents to identify problems in the questionnaire and collect feedback and make revisions if necessary. Questionnaire distribution by selecting the distribution method (online through Google Forms) and contacting the predetermined respondents and explaining the purpose and importance of the research... Data collection by collecting the questionnaires completed by the respondents and ensuring that the data received is complete and

valid. Data analysis by using statistical software such as Microsoft Excel to analyze the collected data and interpret the analysis results to draw conclusions. Reporting the results by compiling a research report that includes background, methodology, results, and conclusions and publishing the research results in journals or academic forums. The data is analyzed using the content analysis method. The way this method works starts from 1) data reduction, 2) data presentation, and 3) drawing conclusions (Pratama & Dewi, 2021).

### Findings

This research was conducted on junior high school / MTs students in Bangkalan Regency using random sampling techniques. The random sampling technique is done through using a table of random numbers available in the questionnaire that has been filled in by the respondent (Wahab & Junaedi, 2022). Based on data from the Bangkalan Regency Central Statistics Agency (BPS) for the 2023/2024 school year, the number of junior high school students in Bangkalan Regency is 36,000 students. Students were randomly selected as respondents. Researchers used the error rate formulated by Isaac and Michael according to Syaputra (2022) to determine the sample size with the random sampling method. The random sampling method is a sample selection technique where each individual in the population has an equal chance of being selected. This method is the basis of a variety of sampling techniques that are more complex and are often used in research. This approach is effective when data on all members of the population is completely available (Syaputra, 2022), considering an error rate of 1%, 5%, 10%. Given the large number of populations involved in this study, the researcher decided to use an error rate of 10%, to calculate the sample size. The researcher applied the slovin formula as follows:

$$n = N1 + Ne2$$

Notes:

n = number of samples

N = total population

e = margin of error

If the calculation is done according to the formula, the minimum acceptable number is:

$$\begin{aligned} n &= N1 + Ne2 \\ &= 36.0001 + 36.000 \times (0,1)^2 \\ &= 36.0001 + 36.000 \times 0,01 \\ &= 36.0001 + 360 \\ &= 36.000361 \\ &= 99,72 \end{aligned}$$

All respondents were junior high school students in Bangkalan Regency, with a total of 100 respondents through filling out a questionnaire. After the data is obtained from the filling results, the data is recapitulated using Microsoft Excel. In the questionnaire there are answer choices in the form of Strongly Agree (SS), Agree (S), Disagree (TS), Strongly Disagree (STS). These options are used to measure the respondent's level of agreement with the Likert scale, where each option has a different score value, namely 1 to 4.

A Likert scale calculation with a score range of 1 to 4 based on 100 respondents is presented. The first statement as many as 39 people gave a strongly agree answer with a score of 5, 58 people answered agree with a score of 3, 2 people chose to disagree with a score of 2, and 1 person gave a score of 1. This pattern continues for each statement until the end.

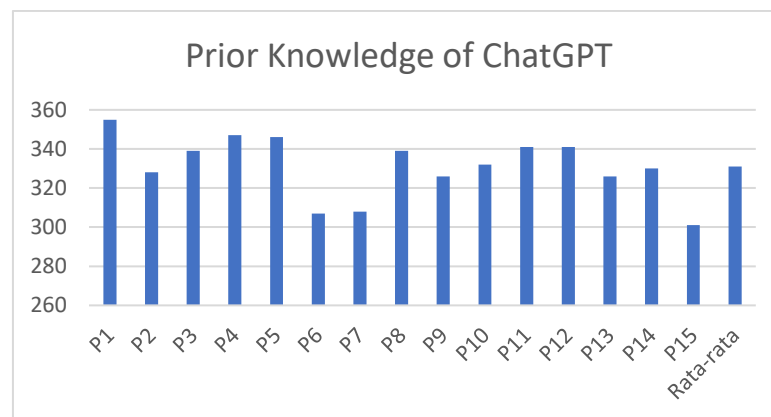
Table 3.1 Likert Scale Calculation

Answer Scale	Likert Scale ( $T \times P_n$ )	Result
SS	$39 \times 4$	156
S	$58 \times 3$	174
TS	$2 \times 2$	4
STS	$1 \times 1$	1

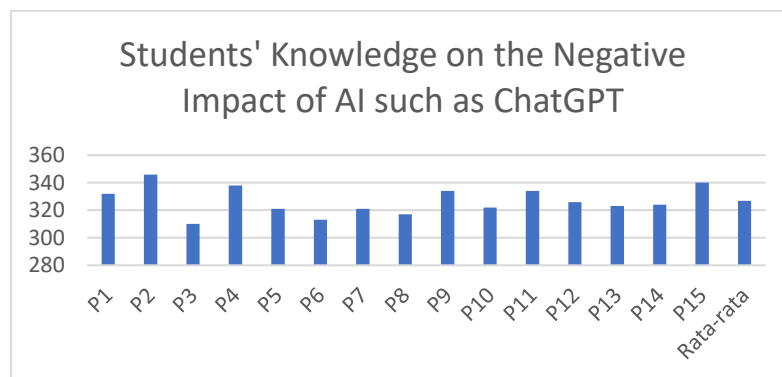
Source: Data processed, 2025

Table 3.1 above shows that the calculation of the results is 156 (Strongly Agree) + 174 (Agree) + 4 (Disagree) + 1 (Strongly Disagree) = 335, and similar calculations are carried out for the next data until the last statement. The following is a summary of the number of respondents' answers based on the scale and the score of all statement answers.

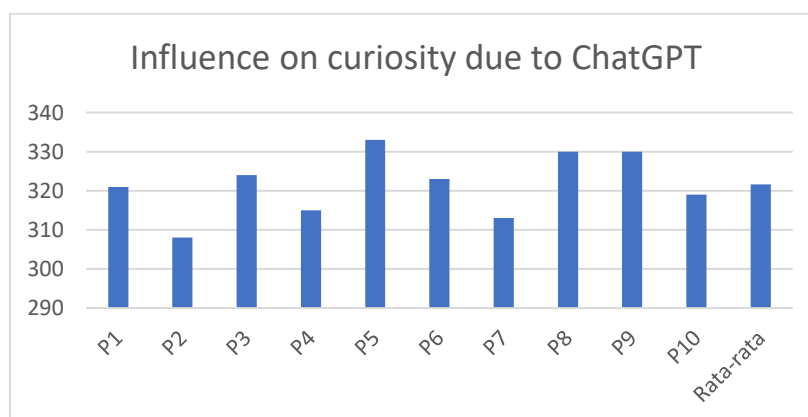
Graph 1 Initial Knowledge of ChatGPT



Graph 2 Students' Knowledge on the Negative Impact of AI such as ChatGPT



Graph 3 Influence on curiosity due to ChatGPT



There are 45 statements divided into 3 categories, so we need to calculate the average of all answers in each category. Here are the average results for each category.

Table 3.2 Average Value Based on Category

Prior Knowledge of ChatGPT	Knowledge of the negative impact of AI such as ChatGPT	Influence on curiosity due to ChatGPT
355	332	321
328	346	308
339	310	324
347	338	315
346	321	333
307	313	323
308	321	313
339	317	330
326	334	330
332	322	319
341	334	
341	326	
326	323	
330	324	
301	340	
average	average	average
331,06	326,7	321,6

After obtaining the average score for each category, as shown in table 3.2 above, the next step is to interpret the calculated scores by determining the highest and lowest scores. The result is as follows:

Description: Highest score = 4

Lowest score = 1

Number of respondents = 100

Highest score =  $4 \times 100 = 400$

Lowest score =  $1 \times 100 = 100$

Interval Formula = number of respondents / score (Likert)

Interval Formula =  $100/4 = 25$

Then the interval result (I) obtained is 25, meaning that the interval value is the lowest distance from 0% to the highest 100%. The following are the criteria for interpreting scores based on intervals.

Table 3.3 Interval Values

Interval	Kriteria
0% - 24%	Very Good
25% - 49%	Good
50% - 74%	Fair
75% - 89%	Less Good
90% - 100%	Very Poor

Source : Yani et al., 2024

Index% Formula =  $\text{Total Score}/X \times 100$

1. Initial knowledge about ChatGPT

Index% formula =  $\text{Total Score}/X \times 100$

Index% formula =  $(331,06 / 400) \times 100 = 82.76\%$  (Less Good)

2. Knowledge of the negative impact of AI such as ChatGPT

$$\text{Index\%} = \text{Total Score} / X \times 100$$

$$\text{Index\% formula} = (326, 7 / 400) \times 100 = 81.67\% \text{ (Less Good)}$$

### 3. Influence on curiosity due to ChatGPT

$$\text{Index\%} = \text{Total Score} / X \times 100$$

$$\text{Index\% formula} = (321, 6 / 400) \times 100 = 80.4\% \text{ (Less Good)}$$

Based on the results of the questionnaires that have been analyzed, this study found that the effect of using ChatGPT on reducing student curiosity is in the “Not Good” category with an index score of 80.4%. From the data obtained, statements related to curiosity showed that most respondents chose Agree (S) and Strongly Agree (SS), although there were also those who chose Disagree (TS) and Strongly Disagree (STS) in smaller numbers. This indicates that although ChatGPT made accessing information easier, some students experienced a significant decrease in curiosity. When compared to the other two categories in this study, prior knowledge of ChatGPT scored 82.76% (the “Poor” category), indicating that most students were already familiar with ChatGPT before this study was conducted. Knowledge of the negative impact of AIs such as ChatGPT had a score of 81.67% (the “Less Good” category), which means students are quite aware of the potential negative impact of using AIs on their learning. Overall, although there are indications that the use of ChatGPT may affect students' curiosity, the effect is still within reasonable limits and has not reached the “Very Poor” category. However, this result still indicates the need to manage the use of AI in learning so as not to reduce students' interest in exploring science.

This study found that the majority of junior high school students in Bangkalan Regency had a poor understanding of ChatGPT with an average score of 82.76%, and a fair understanding of the negative impact of AI with a score of 81.67%. This shows that students generally have sufficient insight into AI technology, including its benefits and risks. In addition, the majority of respondents gave positive responses to questions related to the use of ChatGPT, with more choosing the Agree (S) and Strongly Agree (SS) categories than Disagree (TS) and Strongly Disagree (STS). In the aspect of curiosity, the score obtained was 80.4%, which is still in the “Not Good” category. Although there is a slight decrease compared to the other two categories, this result shows that the use of ChatGPT has not significantly reduced students' curiosity. However, there are still indications that reliance on AI may affect students' drive to seek answers independently. Therefore, there is a need for learning strategies that optimize the use of AI without reducing students' exploration interest in understanding a material in depth.

Research titled “The Effect of Using AI ChatGPT Version 4.0 on Decreasing Curiosity of Junior / Senior High School Students in Bangkalan” shows that the use of ChatGPT can reduce student curiosity. This is due to the tendency of students to rely on instant answers without doing further exploration. As a comparison, previous research by Azanulhaq and Sakaroni (2024) entitled “Student Perceptions of TalkPal AI Technology Integration in Arabic Language Learning” found that the integration of AI technology can actually increase student curiosity. TalkPal encourages students to be more explorative through interactive features designed for active engagement. The similarity between these two studies is that they both examine the influence of AI technology in education, especially related to student motivation and learning behavior. The main difference lies in the type of technology used. ChatGPT provides direct answers that tend to be passive, so students are less encouraged to explore. In contrast, TalkPal requires active interaction, which increases student curiosity. This difference is most likely due to the different platform designs, where ChatGPT focuses on information efficiency, while TalkPal is designed for interactive learning.

The results of this study show that the use of ChatGPT among junior high school students in Bangkalan has a “Not Good” impact on their curiosity, with an index score of 80.4%. While not showing a drastic decline, there are indications that AI may replace students' independent exploration. This finding can be attributed to some broader global issues, such as the transformation of education in the AI era, where many countries face the challenge of balancing the role of AI as a learning tool

without compromising students' critical thinking and exploratory skills. If AI is only used as a tool to provide instant answers, students may lose the habit of searching, analyzing and processing information in depth. In addition, the impact of technology on literacy and cognition is also a global concern. Studies have shown that easier access to information can lead to "cognitive offloading", where individuals tend to rely on AI rather than thinking for themselves. If not managed properly, this could impact the literacy and numeracy of future generations. Another challenge that arises is the digital divide and inequality in AI access. While ChatGPT can improve access to information, not all students have sufficient understanding of how to use it optimally. This can widen the gap between students who can utilize AI for deeper learning and those who only use it passively.

This research helps solve a broader problem by providing empirical evidence of the potential negative impact of AI on student curiosity. The data obtained shows that reliance on ChatGPT can reduce students' habit of seeking and processing information independently. Thus, this study highlights the need for more adaptive and balanced learning strategies in integrating AI in education. In addition, this study contributes to the global discussion on the ethics and regulation of AI use in education. By understanding how ChatGPT affects students' learning patterns, educators and policy makers can design more appropriate approaches in utilizing this technology without hindering the development of critical and explorative thinking skills. Therefore, this research not only provides insights into the challenges of using AI in education, but also opens up opportunities for the development of more effective and innovative learning strategies in the digital age. In addition, this research contributes to the global discussion on the ethics and regulation of AI use in education.

By understanding how ChatGPT affects students' learning patterns, educators and policymakers can design more appropriate approaches in utilizing this technology without hindering the development of critical and explorative thinking skills. Therefore, this research not only provides insights into the challenges of using AI in education, but also opens up opportunities for the development of more effective and innovative learning strategies in the digital age. Besides providing answers to the identified problems, this research also opens up room for further exploration. One aspect that remains unanswered is the most effective learning strategy to optimize the use of AI without reducing students' curiosity. Can an inquiry-based learning method or gamification approach offset the negative impact of AI on independent exploration? In addition, since this study focused on junior high school students in Bangkalan, a broader study is needed to find out whether similar patterns occur at different levels of education or in regions with different characteristics. Thus, this research not only solves the problems that have been defined, but also paves the way for further exploration of how AI can be optimally integrated in education without compromising students' critical thinking and exploratory skills.

## Conclusion

This study summarizes that the use of ChatGPT among junior high school students in Bangkalan Regency has a significant influence on students' curiosity. The main result of the study shows that although students have a fairly good understanding of AI technology, with an average score of 80.4% in the aspect of curiosity, there is a tendency to rely on instant answers from ChatGPT, which may reduce their motivation to explore further information. This finding directly addresses the research question of examining the impact of AI use on student curiosity. Furthermore, this study contributes to science by providing empirical data on the positive and negative impacts of AI technology in education. The results emphasize the importance of developing learning strategies that can optimize the use of AI without compromising students' curiosity and explorative abilities. In a global context, this research is relevant to the challenges faced by education systems around the world, where the integration of technology in learning is becoming increasingly important. The issue of technology dependency and the need for balanced digital literacy are major concerns in today's digital age. This research provides useful insights for educators and policymakers, not only at the local level but also on a broader scale, to create effective learning practices in the future.

## Discussion

This study aims to analyze the effect of using AI technology, specifically ChatGPT, on the curiosity of junior high school students in Bangkalan Regency. The results showed that the use of ChatGPT had a mixed impact on students' curiosity, with an index score of 80.4% which falls into the "Less Good" category. Although it did not show a significant decrease, there are indications that the reliance on instant answers from ChatGPT may affect students' drive for independent exploration. One of the interesting results of this study is that although students recognized the benefits of using ChatGPT in fulfilling their curiosity with quick and structured answers, this could potentially hinder their active engagement in learning. As revealed in the study by Jinda et al. (2023), although students felt helped by the quick access to information, they also lost the opportunity to think critically and explore the material in depth.

In comparison with previous research by Azanulhaq and Sakaroni (2024), which examined the integration of TalkPal AI technology, it was found that TalkPal encouraged more active interaction among students. This suggests that the design of the platform and the way information is delivered greatly influences student engagement in the learning process. While ChatGPT focuses on information efficiency, TalkPal gives students the opportunity to interact directly, leading them to delve further into the various themes studied. Students' understanding of AI technology is also a concern in this study. Most respondents showed sufficient insight into AI technology and its influence on learning, although there is a risk of misuse as a result of over-reliance on technology. The importance of supervision from educators and the development of strategies that promote students' learning independence are crucial in facing this challenge. This research emphasizes the need for policy development and training for educators in optimizing the use of AI as a learning tool without compromising students' critical and exploratory thinking skills. Thus, recommendations for the application of AI technologies in education need to include: first, Policy Development that encourages policymakers to create regulations that support the integration of AI in the curriculum while maintaining a commitment to the development of students' critical thinking skills. Second, Continuous Training for Teachers, by providing training programs that enable teachers to understand and effectively apply AI technologies in teaching, as well as motivate students to be more actively involved in the learning process. Thirdly, Interactive Learning Design, which adapts learning platforms that trigger active interactions, similar to TalkPal, to foster curiosity and encourage independent exploration.

Finally, this study confirms that while AI technologies such as ChatGPT have great potential to improve the quality of education, serious attention must be paid to the risks that can arise from their use. This is particularly important so that the use of technology remains in line with the broader educational goal of developing students into critical, creative and exploratory individuals.

## Suggestions

Expanding the study to other schools in different regions may provide more complete information. Using mixed methods, both quantitative and qualitative, helps to understand the impact of ChatGPT on students' curiosity. Studies should also look at factors such as parental background and social environment. This is important to understand how students use technology.

The development of learning methods that can increase students' curiosity while using ChatGPT is needed. Methods such as project-based learning or gamification can help students be more active. Experimentation plans with different ways of using ChatGPT in learning should be conducted. Training for teachers and students on how to use this technology would be useful. Research looking at the impact of using ChatGPT in the long term could provide important insights. In addition, studies on students' understanding of digital ethics and information literacy skills should also be conducted. These efforts can help the use of AI technology in education by creating better learning experiences.

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