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The Influence of the Use Artificial Intelligence (AI) Based Media on Critical Thinking Skills and Writing Skills of Expository Texts of Class X Students

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A B S T R A C T

The purpose of the study was to prove the significant effect of the use of Artificial Intelligence (AI)-based media on critical thinking skills and exposition text writing skills of class X students of UPT SMA Negeri 4 Luwu. This study used a true experimental design with a pretest-posttest control group design model. All class X students of UPT SMA Negeri 4 Luwu were the population in this study. Data collection techniques through written tests before and after treatment. The results of the analysis indicate that there is a significant effect of the use of Artificial Intelligence (AI)-based media on students' critical thinking skills. The results of the Paired Sample T Test show t_{count} = 30.668 > t_{table} = 2.013 with a Sig. value. (2-tailed) = 0.000 < 0.05 so that H_1 is accepted. The average critical thinking ability increased from 47.13 (low category) to 75.96 (high category). The use of Artificial Intelligence media also has a significant effect on students' exposition text writing skills. The results of the Paired Sample T Test show t_{count}= 8.935 > t_{tabel} = 2.013 with a Sig. value. (2-tailed) = 0.000 < 0.05 so that H_1 is accepted. The average writing skills increased from 58.94 (less category) to 76.38 (sufficient category).

1. Introduction

The development of Information and Communication Technology (ICT) has brought significant changes in various aspects of life, including in the field of education. The increasingly rapid access to information and the ease of connecting to each other have given birth to a new era called the digital era. Darmayanti (2023) stated that Information and Communication Technology (ICT) has become a very important means to modernize and improve the quality of learning. Technology helps educators to present learning materials in a more interactive and interesting way so that it can increase student learning motivation. By utilizing technology, education can become more adaptive and relevant to the needs of students in the 21st century. In the midst of these technological developments,

21st century skills are becoming increasingly relevant and important for students to master.

Currently, the government has implemented the Independent Curriculum as part of an effort to prepare the younger generation to face global challenges in the 21st century. This curriculum emphasizes flexible and student-centered learning and allows them to develop 21st century skills. Critical thinking skills and writing skills are two important aspects of education that need to be developed in students, especially at the High School (SMA) level. Agnafia (2019) defines critical thinking as the ability to analyze a situation based on facts and evidence obtained so that it will produce a conclusion. Critical thinking is one of the high-level thinking skills needed in developing 21st century skills. According to the World Economic Forum (2020) critical thinking is ranked second out of the top ten skills needed in the future.

Writing skills as one of the elements in the Indonesian language subject based on the Merdeka Curriculum is the level that requires the most attention because writing is an activity that is often considered difficult by most people. Writing requires a number of knowledge and skills such as word choice, language style, and the ability to construct sentences according to the intent to be conveyed to the reader.

One of the writing skills commonly applied in schools is writing expository texts. Naniksunarsih (2022) states that expository text is a type of text that aims to convey information, knowledge, or ideas objectively and logically. Expository texts not only test students' abilities in conveying information, but also hone their argumentation skills and develop students' communication skills effectively. Writing expository texts has an important role to be introduced to students as explained by Hasana et al. (2023). This is because writing expository texts is a type of text that explains a number of information to readers so that by reading the expository text, readers will gain detailed knowledge about a thing or event that is written. For high school students, especially grade X, developing critical thinking skills and writing expository texts is very important because at this stage it is a transition period towards higher education and the world of work. Therefore, researchers chose critical thinking skills and writing expository texts to study. Grade X students begin to face more complex academic challenges and require deeper analytical skills.

Students' critical thinking skills and expository text writing skills still experience difficulties. A number of research results prove that the low condition of critical thinking skills was carried out by Wayudi et al. (2020) and Benyamin et al. (2021). The results of the study by Wayudi et al. (2020) concluded that the average level of critical thinking skills of class X students at one of the Bandung SMANs was generally still in the low category, which was indicated by a score of only 46.60. Furthermore, the results of the study by Benyamin et al. (2021) found that the critical thinking skills of class X SMA students were in the low category with a percentage of 43.01%.

In addition to students' low critical thinking skills, their ability to write expository texts is also relatively low. This is evidenced by the results of a study conducted by Ajis (2022) which found that the ability to write expository texts is relatively low with an average of 41.50%. It is often found that there are still students who are not good when directed to write expository texts. There are many reasons behind this, namely that students feel that when writing expository texts they will feel bored, not interested, and have not been able to develop arguments in the expository text. This hinders students' ability to understand what they write as stated by Aminullah (2020).

In reality, critical thinking skills and expository text writing skills, especially at UPT SMA Negeri 4 Luwu, experience several obstacles. SMA Negeri 4 Luwu is located at Jl. Pendidikan No. 24, Padang Sappa, Ponrang, Luwu Regency, South Sulawesi and is one of the high schools in South Sulawesi that has implemented the Merdeka Curriculum in learning. Based on the results of interviews with Indonesian language teachers on Thursday, July 25, 2024, researchers obtained information that the use of conventional media in learning makes students feel bored so that their critical thinking skills, especially in developing logical arguments, tend to be low. This is clearly seen when they are asked to write expository texts. Students often have difficulty constructing strong arguments because they tend to accept information without evaluating or analyzing it first. Therefore, interactive media is needed that can help students understand how to construct strong arguments and write well. The media is expected to be able to provide step-by-step guidance in writing expository texts and encourage students to think critically.

One effort that can be made to overcome these problems is to utilize learning media based on Artificial Intelligence (AI). Artificial Intelligence (AI) has become the main focus of discussion in current technological developments and is widely used in various aspects of human life, including education. One form of Artificial Intelligence application in education is learning media based on Artificial Intelligence (AI) which is designed to improve critical thinking skills and writing skills. These two skills are not only important for academic success, but also for success in professional and personal life in the future.

Popenici and Kerr (2017) define Artificial Intelligence (AI) simply as intelligence demonstrated by a system, machine, or program. Artificial Intelligence (AI) enables computer systems to perform tasks that normally require human intelligence, such as pattern recognition, problem solving, and decision making as reported by Huang & Rust (2018). Furthermore, Richter et al. (2019) stated that Artificial Intelligence (AI) can be used to develop various learning applications and platforms, such as intelligent tutoring systems, content recommendation systems, and learning chatbots.

One of the Artificial Intelligence (AI) used in this study is Chat GPT. Chat GPT (Generative Pre-trained Transformer) is a chatbot that utilizes Artificial Intelligence (AI) or artificial intelligence that is able to interact and help humans in doing various tasks. Chat GPT is one of the AI applications that functions to

interact in text-based conversations as stated by Iriyani et al. (2023). Chat GPT functions as an effective tool in improving students' critical thinking and writing skills in class. The process begins with the introduction of Chat GPT to students, the teacher explains the functionality of this AI as a source of information and writing support. Chat GPT works in developing critical thinking and writing skills through prompt-based interactions provided by the user. Furthermore, Maulana et al. (2023) stated that the use of Chat GPT can increase students' learning motivation because AI can provide convenience in providing information and learning various sciences. Chat GPT can respond to human questions in the form of text typed into the application and can help students understand complex subject matter.

Several studies related to the use of Artificial Intelligence (AI) have been conducted by Abimanto & Mahendro (2023), Siregar (2023), Yasmar (2023), Meiliawati et al. (2024) and Diantama (2024). Several previous studies have shown the results of the use of Artificial Intelligence (AI)-based media. However, these studies still focus on the general learning context and have not specifically examined the use of Artificial Intelligence (AI)-based media on critical thinking skills and writing skills. Therefore, researchers are interested in conducting a study entitled "The Effect of Using Artificial Intelligence (AI)-Based Media on Critical Thinking Skills and Writing Skills of Expository Texts of Class X Students". This study aims to prove the significant influence of the use of Artificial Intelligence (AI) -based media on critical thinking skills and writing skills of expository texts of class X students.

2. Methodology

a. Research Design

This research is an experimental research. Sugiyono (2011: 111) defines experimental research as research conducted with experiments to determine the effect of independent variables (treatments) on dependent variables (outcomes) under controlled conditions. This study uses a true experimental design with a pretest-posttest control group design model. The main characteristic of a true experimental design is that the samples used for the experimental group and the control group are taken randomly from a certain population as stated by Sugiyono (2020: 115).

b. Population and Samples

The population in this study were all students of Class X UPT SMA Negeri 4 Luwu in the academic year of 2024/2025. The sampling technique in this study was carried out using simple random sampling, namely sampling carried out randomly without considering the strata in the population, this method is carried out if the population members are considered homogeneous as explained by Sugiyono (2020: 129). Furthermore, to determine and find out how many samples were taken, the researcher used Arikunto's theory. Arikunto (2017: 173) stated

that if the subject is less than 100, the entire population becomes the research sample, but if the subject is more than 100, 10-15% or 15-25% can be taken. In this study, the researcher chose to take a sample of 25% of 377 students. (377 x 25% = 94.25) rounded up to 94 samples.

c. Data Collection

Based on the research design used, the data collection technique used is a written test. The researcher gave a pretest (initial test) and posttest (final test) to students.

d. Instrument

The instrument used in this study was an expository text writing skills test integrated with a critical thinking ability test. This test was given to all groups before and after the implementation of learning. The assessment of the test results was carried out using a range of 1-5 then processed in the form of a value with a range of 0-100. The following is the formula for processing scores into values:

$$\text{Value} = \frac{\text{score obtained}}{\text{maximum score}} \text{x } 100$$

The values obtained are then interpreted to determine the level of students' critical thinking abilities which refers to the value interpretation interval used according to Danaryanti and Lestari (2017) as seen in Table 1.

Table 1. Critical Thinking Ability Assessment Categories

Category	Interval
Very high	81.25 < x < 100
Tall	71.5 < x < 81.25
Currently	62.5 < x < 71.5
Low	43.75 < x < 62.5
Very low	0 < x < 43.75

The values obtained are then interpreted to determine the level of students' expository text writing skills which refer to the value interpretation interval used according to Kunandar (2013: 13) as seen in table 2.

Table 2. Categories of Expository Text Writing Skills Assessment

Value Range	Category
91 - 100	Very Good (A)
81 - 90	Good (B)
70 - 80	Enough C)
< 70	Less (D)

e. Data Analysis

Data analysis was carried out through two main stages, namely descriptive statistical analysis and inferential statistical analysis. Descriptive statistical

analysis in this study is used to describe the characteristics of student learning outcomes which include the highest value (maximum value), the lowest value (minimum value), the average value (mean), the middle value (median), the mode value (mode), standard deviation, frequency distribution table and frequency distribution histogram. Sugiyono (2020: 207) explains that inferential analysis is a statistical technique used to analyze sample data and the results can be concluded as a population. In analyzing research data, software is used SPSS version 26 for windows. Inferential statistical analysis is used to test the research hypothesis. Before conducting a hypothesis test, a normality test is first carried out.

3. Result and Discussion

This section presents the results of data analysis from critical thinking ability tests and expository text writing skills given to students in the experimental and control classes. Both classes were previously given a pretest. with the same questions to determine their level of critical thinking skills and expository text writing skills. Furthermore, the experimental class was given treatment by using Artificial Intelligence-based media, namely, Chat GPT during the learning process and in the control class using conventional media. After three learning sessions, both classes were given a posttest with the same questions. The following is an analysis of the data obtained.

A. The Influence of the Use of Artificial Intelligence (AI) Based Media on the Critical Thinking Skills of Class X Students of UPT SMA Negeri 4 Luwu

a. Results of the Experimental Class Critical Thinking Skills Pretest

The results of the pretest of students' critical thinking skills in the experimental class obtained the highest score of 65 and the lowest score of 30. The average score (mean) was 47.13, the middle score (median) was 45.00, the mode score was 50 and the standard deviation was 8.453. To determine the class range, the formula for maximum value - minimum value was used so that the class range was 65-30 = 35.

Table 3. Frequency Distribution of Critical Thinking Ability Pretest Scores

Class	Class Interval	Frequency	Percentage (%)
1	30-34	1	2.12%
2	35-39	6	12.76%
3	40-44	8	17.02%
4	45-49	9	19.14%
5	50-54	10	21.27%
6	55-59	7	14.89%
7	60-65	6	12.76%
	Amount	47	100%

To determine the number of class intervals, the Sturges formula was used, namely K = 1 + 3.33 log n, n is the number of samples. Based on the calculation, it is known that n = 47 so that K = 1 + 3.33 (log 47) = 6.51 is rounded up to 7 class

intervals. Meanwhile, the length of the class uses the formula for class range / number of classes (35/7) = 5. The following is the frequency distribution of the pretest scores of critical thinking skills of experimental class students that have been grouped based on the predetermined class intervals. As seen in Table 3.

b. Posttest Results of Critical Thinking Skills of Experimental Class

The results of the posttest of students' critical thinking skills in the experimental class obtained the highest score of 90 and the lowest score of 60. The average score (mean) was 76.96, the middle score (median) was 75.00, the mode score was 75 and the standard deviation was 7.706. To determine the class range, the formula for maximum value - minimum value was used so that the class range was 90-60 = 30. To determine the number of class intervals, the Sturges formula was used, namely K = 1 + 3.33 log n, n is the number of samples. Based on the calculation, it is known that n = 47 so that K = 1 + 3.33 (log 47) = 6.51 was rounded up to 7 class intervals. Meanwhile, the class length uses the formula for class range / number of classes (30/7) = 4.28 rounded up to 5. The following is the frequency distribution of the posttest scores of critical thinking skills of experimental class students that have been grouped based on the predetermined class intervals. As seen in Table 4.

Table 4. Frequency Distribution of Critical Thinking Ability Posttest Scores

Class	Class Interval	Frequency	Percentage (%)
1	60-64	2	4.25%
2	65-69	4	8.51%
3	70-74	10	21.27%
4	75-79	11	23.40%
5	80-84	11	23.40%
6	85-89	5	10.63%
7	90-94	4	8.51%
	Amount	47	100%

c. Critical Thinking Skills Pretest Results of Control Class

The results of the pretest of students' critical thinking skills in the control class obtained the highest score of 65 and the lowest score of 30. The average score (mean) was 45.85, the middle score (median) was 45.00, the mode score was 45 and the standard deviation was 8.866. To determine the class range, the formula for maximum value - minimum value was used so that the class range was 65-30 = 28. To determine the number of class intervals, the Sturges formula was used, namely K = 1 + 3.33 log n, n is the number of samples. Based on the calculation, it is known that n = 47 so that K = 1 + 3.33 (log 47) = 6.51 is rounded up to 7 class intervals. Meanwhile, the class length uses the formula for class range/ number of classes (35/7) = 5. The following is the frequency distribution of the pretest scores of critical thinking skills of control class students that have been grouped based on the predetermined class intervals. As seen in Table 5.

Table 5. Frequency Distribution of Critical Thinking Ability Pretest Scores

Class	Class Interval	Frequency	Percentage (%)
1	30-34	3	6.38%
2	35-39	7	14.89%
3	40-44	7	14.89%
4	45-49	9	19.14%
5	50-54	9	19.14%
6	55-59	8	17.02%
7	60-65	4	8.51%
	Amount	47	100%

d. Posttest Results of Critical Thinking Skills of Control Class

The results of the posttest of students' critical thinking skills in the control class obtained the highest score of 75 and the lowest value of 40. The average value (mean) is 59.36, the middle value (median) 60.00, mode value (mode) 60 and standard deviation 8.945 . To determine the class range, the formula for maximum value - minimum value is used so that the class range is 75-40 = 35. To determine the number of class intervals, the Sturges formula is used, namely K = 1 + 3.33 log n, n is the number of samples. Based on the calculation, it is known that n = 47 so that K = 1 + 3.33 (log 47) = 6.51 is rounded up to 7 class intervals. Meanwhile, the class length uses the formula for class range / number of classes (35 / 7) = 5. The following is the frequency distribution of the posttest scores of critical thinking skills of control class students that have been grouped based on the predetermined class intervals. As seen in Table 6.

Table 6. Frequency Distribution of Critical Thinking Ability Posttest Scores

Class	Class Interval	Frequency	Percentage (%)
1	40-44	1	2.12%
2	45-49	3	6.38%
3	50-54	8	17.02%
4	55-59	7	14.89%
5	60-64	11	23.40%
6	65-69	9	19.14%
7	70-75	8	17.02%
	Amount	47	100%

e. Pretest-Posttest Differences in the Use of Artificial Intelligence (AI) Based Media on the Critical Thinking Skills of Class X Students of UPT SMA Negeri 4 Luwu

1) Normality Test

The normality test is carried out to determine whether the research data is normally distributed or not. The normality test used in this study is the Shapiro-Wilk normality test using SPSS software version 26 for windows. The criteria for normality testing are, if the sig. value > 0.05 then the data is normally distributed, while if the sig. value < 0.05 then the data is not normally distributed. The results of the normality test are displayed to show the distribution of the data. As seen in Table 7.

Table 7. Results of the Normality Test for Pretest and Posttest Critical Thinking Ability Values Experimental Class

Tests of Normality

	Kolmogorov-Smirnov [a]			Shapiro Wilk		
	Statistics	df	Sig.	Statistics	df	Sig.
Pretest	.122	47	.075	.958	47	.089
Posttest	.126	47	.061	.953	47	.059

a. Lilliefors Significance Correction

Based on table 7, the results of the normality test show that the pretest data of the critical thinking ability of the experimental class has a significance value of 0.089 because the sig. value is 0.89 > 0.05, so the pretest data is normally distributed. Meanwhile, the posttest data of the critical thinking ability of the experimental class has a significance value of 0.059 because the sig. value is 0.059 > 0.05 , so the posttest data is normally distributed.

2) Hypothesis Test

Based on the results of the normality test, it was found that the pretest and posttest values of the critical thinking skills of the experimental class were normally distributed. Therefore, hypothesis testing in this study was carried out using the Paired Sample T Test. The Paired Sample T Test is used to prove whether there is a difference in the average pretest and posttest scores or a significant influence of the use of Artificial Intelligence (AI)-based media on critical thinking skills in the experimental class after being given treatment. Hypothesis testing was conducted to determine the significant difference between pretest and posttest scores after the treatment was given. As seen in Table 8.

Table 8. Paired Sample Test Pretest and Posttest Critical Thinking Ability Experimental Class

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pretest Posttest	-28.830	6.445	.940	-30.722	-26.938	-30.668	46	.000

Based on table 8 " Paired Samples Test " it is known that the sig.(2- tailed) value is 0.000 < 0.05 so that H_1 is accepted. In addition, the "Mean Paired Differences" value is -28.830 which is the difference between the average learning outcomes of the pretest (47.13) and posttest (75.96). The table also shows the value t_{count} which is negative by -30.668. t_{count} has a negative value because the average value of the pretest learning outcomes is lower than the average value of the posttest learning outcomes . However, in a context like this, the value t_{count} negative can have a positive meaning so value t_{count} to 30,668. Then t_{table}

searched based on the df value (degree of freedom) and significance value (α/2). From the table It is known that the df value is 46 and the value is 0.05 /2=0.025 so that the value obtained is t_{table} of 2.013. Because the value t_{count} 30.668 > t_{table} 2.013 then H_1 is accepted so it can be concluded that there is an average difference between the learning outcomes of the pretest and posttest, which means that there is a significant influence of the use of Artificial Intelligence (AI)-based media on the critical thinking skills of class X students of UPT SMA Negeri 4 Luwu.

B. The Influence of the Use of Artificial Intelligence (AI) Based Media on the Expository Text Writing Skills of Class X Students of UPT SMA Negeri 4 Luwu

a. Pretest Results of Expository Text Writing Skills in Experimental Class

The results of the pretest of students' exposition text writing skills in the experimental class obtained the highest score of 75 and the lowest score of 40. The average score (mean) was 58.94, the middle score (median) was 60.00, the mode score was 60 and the standard deviation was 9.495. To determine the class range, the formula for maximum value - minimum value was used so that the class range was 75-40 = 35. To determine the number of class intervals, the Sturges formula was used, namely K = 1 + 3.33 log n, n is the number of samples. Based on the calculation, it is known that n = 47 so that K = 1 + 3.33 (log 47) = 6.51 is rounded up to 7 class intervals. Meanwhile, the class length uses the formula for class range/number of classes (35/7) = 5. The following is the frequency distribution of pretest scores for the expository text writing skills of experimental class students that have been grouped based on the predetermined class intervals. As seen in Table 9.

Table 9. Frequency Distribution of Pretest Scores for Expository Text Writing Skills

Class	Class Interval	Frequency	Percentage (%)
1	40-44	3	6.38%
2	45-49	2	4.25%
3	50-54	8	17.02%
4	55-59	7	14.89%
5	60-64	9	19.14%
6	65-69	8	17.02%
7	70-75	10	21.27%
	Amount	47	100%

b. Posttest Results of Expository Text Writing Skills in Experimental Class

The posttest results of students' exposition text writing skills in the experimental class obtained the highest score of 90 and the lowest score of 55. The average score (mean) was 76.38, the middle score (median) was 75.00, the mode score was 75 and the standard deviation was 8,766. To determine the class range, the formula for maximum value - minimum value was used so that the class range was 90-55 = 35. To determine the number of class intervals, the Sturges formula

was used, namely K = 1 + 3.3 log n, n is the number of samples. Based on the calculation, it is known that n = 47 so that K = 1 + 3.33 (log 47) = 6.51 is rounded up to 7 class intervals. Meanwhile, the length of the class uses the formula for class range/number of classes (35/7) = 5. The following is the frequency distribution of posttest scores for the expository text writing skills of experimental class students that have been grouped based on the predetermined class intervals. As seen in Table 10.

Table 10. Frequency Distribution of Posttest Scores for Expository Text Writing Skills

Class	Class Interval	Frequency	Percentage (%)
1	55-59	1	2.12%
2	60-64	2	4.25%
3	65-69	4	8.51%
4	70-74	8	17.02%
5	75-79	11	23.40%
6	80-84	9	19.14%
7	85-90	12	25.53%
	Amount	47	100%

c. Pretest Results of Expository Text Writing Skills in Control Class

The results of the pretest of students' exposition text writing skills in the control class obtained the highest score of 75 and the lowest score of 40. The average score (mean) was 56.81, the middle score (median) was 55.00, the mode score was 50 and the standard deviation was 9.692. To determine the class range, the formula for maximum value - minimum value was used so that the class range was 75-40 = 35. To determine the number of class intervals, the Sturges formula was used, namely K = 1 + 3.33 log n, n is the number of samples. Based on the calculation, it is known that n = 47 so that K = 1 + 3.33 (log 47) = 6.51 is rounded up to 7 class intervals. Meanwhile, the class length uses the formula for class range/number of classes (35/7) = 5. The following is the frequency distribution of pretest scores for the expository text writing skills of control class students that have been grouped based on the predetermined class intervals. As seen in Table 11.

Table 11. Frequency Distribution of Pretest Scores for Expository Text Writing Skills

Class	Class Interval	Frequency	Percentage (%)
1	40-44	4	8.51%
2	45-49	4	8.51%
3	50-54	9	19.14%
4	55-59	8	17.02%
5	60-64	8	17.02%
6	65-69	6	12.76%
7	70-75	8	17.02%
	Amount	47	100%

d. Posttest Results of Control Class Exposition Text Writing Skills

The results of the posttest of students' exposition text writing skills in the control class obtained the highest score of 85 and the lowest score of 50. The average score (mean) was 67.23, the middle score (median) was 70.00, the mode score was 70 and the standard deviation was 9,990. To determine the class range, the formula for maximum value - minimum value was used so that the class range was 85-50 = 35. To determine the number of class intervals, the Sturges formula was used, namely K = 1 + 3.33 log n, n is the number of samples. Based on the calculation, it is known that n = 47 so that K = 1 + 3.33 (log 47) = 6.51 is rounded up to 7 class intervals. Meanwhile, the class length uses the formula for class range / number of classes (35/7) = 5. The following is the frequency distribution of posttest scores for the expository text writing skills of control class students that have been grouped based on the predetermined class intervals. As seen in Table 12.

Table 12. Frequency Distribution of Posttest Scores for Expository Text Writing Skills

Class	Class Interval	Frequency	Percentage (%)
1	50-54	4	8.51%
2	55-59	5	10.63%
3	60-64	6	12.76%
4	65-69	8	17.02%
5	70-74	11	23.40%
6	75-79	5	10.63%
7	80-85	8	17.02%
	Amount	47	100%

e. Pretest-Posttest Differences in the Use of Artificial Intelligence (AI) Based Media on the Writing Skills of Expository Texts of Class X Students of UPT SMA Negeri 4 Luwu

A. Normality Test

The normality test is carried out to determine whether the research data is normally distributed or not. The normality test used in this study is the Shapiro-Wilk normality test using SPSS software version 26 for windows . The criteria for normality testing are, if the sig. value > 0.05 then the data is normally distributed, while if the sig. value < 0.05 then the data is not normally distributed. The results of the normality test are displayed to show the distribution of the data. As seen in Table 13.

Based on table 13, the results of the normality test show that the pretest data of the experimental class' exposition text writing skills have a significance value of 0.061 because the sig. value is 0.061 > 0.05 , so the pretest data is normally distributed. Meanwhile, the posttest data of the experimental class' exposition text writing skills have a significance value of 0.060 because the sig. value is 0.060 > 0.05 , so the posttest data is normally distributed.

Table 13. Results of the Normality Test of Pretest and Posttest Values for the Writing Skills of Expository Texts in the Experimental Class

Tests of Normality						
	Kolmogorov-Smirnov [a]			Shapiro Wilk		
	Statistics	df	Sig.	Statistics	df	Sig.
Pretest	.121	47	.080	.954	47	.061
Posttest	.118	47	.098	.954	47	.060

a. Lilliefors Significance Correction

B. Hypothesis Test

Based on the results of the normality test, it was found that the pretest and posttest scores for the expository text writing skills of the experimental class were normally distributed. Therefore, hypothesis testing in this study was carried out using the Paired Sample T Test. The Paired Sample T Test is used to prove whether there is a difference in the average pretest and posttest scores or a significant influence of the use of Artificial Intelligence (AI)-based media on expository text writing skills in the experimental class after being given treatment. Hypothesis testing was conducted to determine the significant difference between pretest and posttest scores after the treatment was given. As seen in Table 14.

Table 14. Paired Sample Test Pretest and Posttest Writing Skills Experimental Class Exposition Text

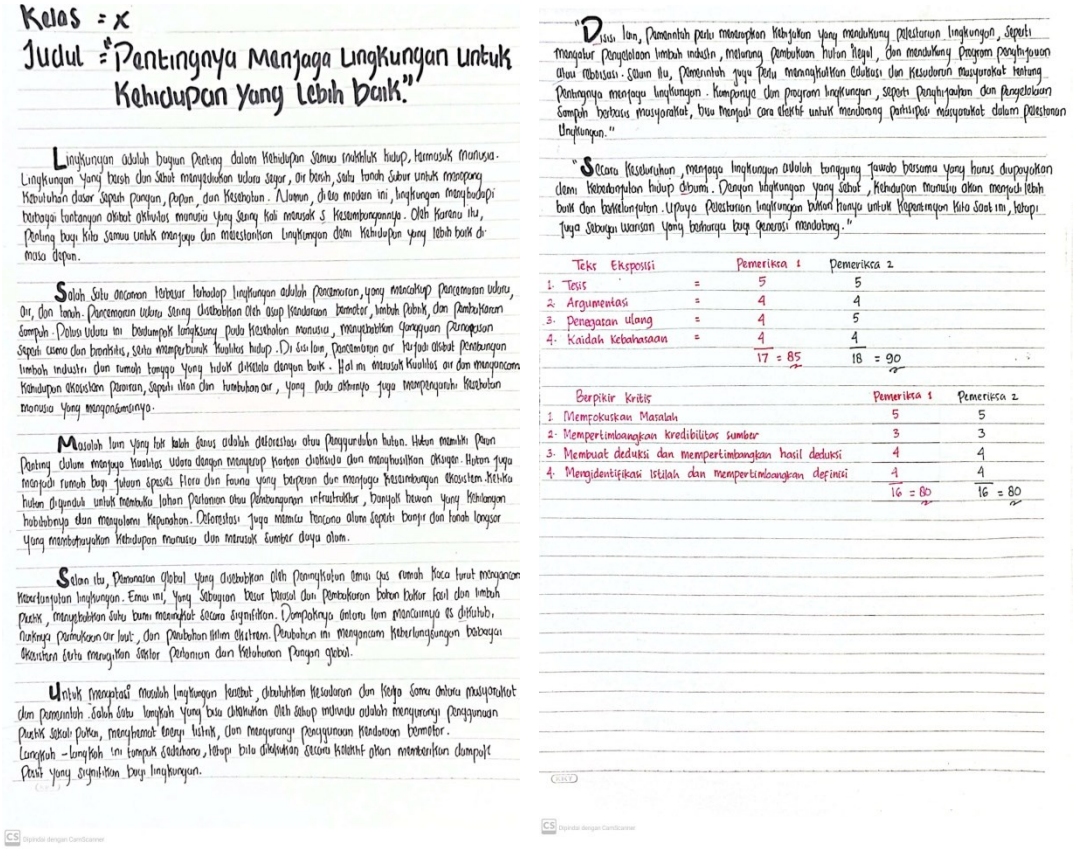
Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pretest Posttest	-17.447	13.387	1.953	-21.377	-13.516	-8.935	46	.000

Based on table 14 " Paired Samples Test " it is known that the sig value (2- tailed) is 0.000 < 0.05 so that H $_1$ is accepted. In addition, the value of " Mean Paired Differences " is -17.447 which is the difference between the average learning outcomes of the pretest (58.94) and posttest (76.38). The table also shows the value t_{count} which is negative by -8.935. t_{count} has a negative value because the average value of the pretest learning outcomes is lower than the average value of the posttest learning outcomes . However, in a context like this, the value t_{count} negative can have a positive meaning so value t_{count} to 8.935. Then t_{table} searched based on the df value (degree of freedom) and significance value (α/2). From the table It is known that the df value is 46 and the value is 0.05 /2=0.025 so that the value obtained is t_{table} of 2,013. Because the value t_{count} 8,935 > t_{table} 2.013 then H_1 is accepted so it can be concluded that there is an average difference between the learning outcomes of the pretest and posttest, which means that there is a significant influence of the use of Artificial Intelligence (AI)-based

media on the expository text writing skills of class X students of UPT SMA Negeri 4 Luwu.

f. Posttest results of students' critical thinking skills and expository text writing skills

The posttest results show the achievement of students' critical thinking skills and expository text writing skills after being given treatment as seen in Figure 1.


Kelas : X
Judul : "Pentingnya Menjaga Lingkungan untuk Kehidupan yang Lebih Baik."

Lingkungan adalah bagian penting dalam kehidupan semua makhluk hidup, termasuk manusia. Lingkungan yang bersih dan sehat menyediakan udara segar, air bersih, satu tanah subur untuk menopang kebutuhan dasar seperti pangan, papan, dan kesehatan. Namun, di era modern ini, lingkungan menghadapi berbagai tantangan akibat aktivitas manusia yang sering kali merusak 3 keseimbangannya. Oleh karena itu, penting bagi kita semua untuk menjaga dan melestarikan lingkungan demi kehidupan yang lebih baik di masa depan.

Salah satu ancaman terbesar terhadap lingkungan adalah pencemaran, yang mencakup pencemaran udara, air, dan tanah. Pencemaran udara sering disebabkan oleh asap kendaraan bermotor, limbah pabrik, dan pembakaran sampah. Polusi udara ini berdampak langsung pada kesehatan manusia, menyebabkan gangguan pernapasan seperti asma dan bronkitis, serta memperburuk kualitas hidup. Di sisi lain, pencemaran air terjadi akibat pembuangan limbah industri dan rumah tangga yang tidak dikelola dengan baik. Hal ini merusak kualitas air dan mengancam kehidupan akuatikan perairan, seperti ikan dan tumbuhan air, yang pada akhirnya juga mempengaruhi kesehatan manusia yang mengonsumsinya.

Masalah lain yang tak kalah serius adalah deforestasi atau penggundulan hutan. Hutan memiliki peran penting dalam menjaga kualitas udara dengan menyerap karbon dioksida dan menghasilkan oksigen. Hutan juga menjadi rumah bagi jutaan spesies flora dan fauna yang berperan dalam menjaga keseimbangan ekosistem. Ketika hutan digunduli untuk membuka lahan pertanian atau pembangunan infrastruktur, banyak hewan yang kehilangan habitatnya dan mengalami kepunahan. Deforestasi juga memicu perubahan iklim global seperti banjir dan tanah longsor yang membahayakan kehidupan manusia dan merusak sumber daya alam.

Selain itu, pemanasan global yang disebabkan oleh penggunakan emisi gas rumah kaca turut memperparah kerusakan lingkungan. Emisi ini, yang sebagian besar berasal dari pembakaran bahan bakar fosil dan limbah plastik, menyebabkan suhu bumi meningkat secara signifikan. Dampaknya antara lain mencairnya es di kutub, naiknya permukaan air laut, dan perubahan iklim ekstrem. Perubahan ini mengancam keberlangsungan berbagai ekosistem serta mengikis sektor pertanian dan ketahanan pangan global.

Untuk mengatasi masalah lingkungan tersebut, diperlukan kesadaran dan kerja sama antara masyarakat dan pemerintah. Salah satu langkah yang bisa dilakukan oleh setiap individu adalah mengurangi penggunaan plastik sekali pakai, menghemat energi listrik, dan mengurangi penggunaan kendaraan bermotor. Langkah-langkah ini tampak sederhana, tetapi bila dilakukan secara kolektif akan memberikan dampak positif yang signifikan bagi lingkungan.

"Disisi lain, pemerintah perlu menerapkan kebijakan yang mendukung pelestarian lingkungan, seperti mengatur pengelolaan limbah industri, melarang pembukaan hutan liar, dan mendukung program penghijauan atau reboisasi. Selain itu, pemerintah juga perlu meningkatkan edukasi dan kesadaran masyarakat tentang pentingnya menjaga lingkungan. Kompanye dan program lingkungan, seperti penghijauan dan pengelolaan sampah berbasis masyarakat, bisa menjadi cara efektif untuk meningkatkan partisipasi masyarakat dalam pelestarian lingkungan."

"Secara keseluruhan, menjaga lingkungan adalah tanggung jawab bersama yang harus diupayakan demi keberlangsungan hidup umum. Dengan lingkungan yang sehat, kehidupan manusia akan menjadi lebih baik dan berkelanjutan. Upaya pelestarian lingkungan bukan hanya untuk kepentingan kita saat ini, tetapi juga sebagai warisan yang berharga bagi generasi mendatang."

Teks Ekspositi		Pemeriksa 1	Pemeriksa 2
1. Tesis	=	5	5
2. Argumentasi	=	4	4
3. Penegasan ulang	=	4	5
4. Kaidah kebahasaan	=	4	4
		17 = 85	18 = 90

Berpikir kritis	Pemeriksa 1	Pemeriksa 2
1. Memfokuskan masalah	5	5
2. Mempertimbangkan kredibilitas sumber	3	3
3. Membuat deduksi dan mempertimbangkan hasil deduksi	4	4
4. Mengidentifikasi istilah dan mempertimbangkan definisi	4	4
	16 = 80	16 = 80

Figure 1. Posttest Results of Students' Critical Thinking Skills and Expository Text Writing Skills

The figure of the posttest results of students' critical thinking skills and expository text writing skills above illustrates the improvement in the quality of students' writing after being given appropriate learning treatment. In the writing entitled "*The Importance of Protecting the Environment for a Better Life*", it can be seen that students are starting to be able to construct arguments in a more structured way, convey main ideas clearly, and demonstrate critical awareness of environmental issues. Although there are still some errors in spelling and sentence structure, the content of the writing shows that students are able to identify problems, provide logical explanations, and offer solutions, which reflects the development of critical thinking skills and expository text writing skills as a whole.

Discussion

The critical thinking skills of class X students of UPT SMA Negeri 4 Luwu in this study were assessed based on four main indicators according to Ennis, namely: (1) focusing on problems, (2) considering the credibility of sources, (3) making deductions and considering deductions (4) identifying terms and considering definitions. Based on the results of the study, there is a significant influence of the use of Artificial Intelligence (AI)-based media on the critical thinking skills of class X students of UPT SMA Negeri 4 Luwu. GPT Chat is able to provide adaptive learning and is equipped with automatic feedback features. This feature helps students to analyze information in depth and evaluate arguments from multiple perspectives.

In addition, Chat GPT also provides an interactive learning experience so that students become active participants who are directly involved in the learning process and are able to construct knowledge independently. This is in line with the theory of constructivism which emphasizes that knowledge is built by the understander himself through interactive and reflective learning experiences. According to this theory, students actively construct their own understanding, not just receiving information from the teacher. Therefore, effective learning occurs when students are actively involved in the learning process and link new information to existing knowledge as explained by Casfian et al. (2024).

Chat GPT also helps students develop analytical, evaluation, and reflection skills on the information they encounter. GPT Chat helps students to explore multiple perspectives on a topic through text analysis. In this way, students are encouraged to not only receive information passively, but also to criticize, compare and construct stronger arguments.

These findings are in line with research by Rizaldi et al. (2024) which found that the use of AI technology, including Chat GPT , is effective in improving students' critical thinking skills. Rizaldi emphasized that students with a high level of critical thinking tend to be able to question the credibility of information obtained from Chat GPT and draw accurate conclusions based on existing data. Furthermore, research conducted by Essel et al. (2024) shows that the use of Chat GPT in class assignments can effectively improve students' critical thinking skills. Interactive dialogue with Chat GPT encourages students to think critically by considering diverse perspectives and ideas. This technology is very helpful for students who need additional assistance in practicing critical thinking skills.

The skill of writing expository texts in this study was measured based on two main indicators, namely text structure (thesis, argumentation, and reaffirmation) and language rules. Based on the research results, there is a significant influence of the use of Artificial Intelligence (AI)-based media on the expository text writing skills of class X students at UPT SMA Negeri 4 Luwu. Chat GPT as an Artificial Intelligence (AI) based media helps students in writing expository texts by providing guidance from thesis formulation to reaffirmation. This technology can provide direct feedback, such as grammar and spelling corrections, as well as

suggestions for developing ideas and writing structures. GPT Chat's ability to provide specific feedback also helps students identify weaknesses in their writing, thereby encouraging motivation to continue writing better.

The results of this study support the findings of Yasmar (2023) who stated that AI technology such as Chat GPT can help writers develop new ideas, provide feedback, speed up the writing process and enrich the variety of writing styles. In addition, Mahapatra's research (2024) also showed that Chat GPT has a significant positive impact on students' academic writing skills with very positive perceptions of the technology. This finding confirms that AI technology such as Chat GPT is a smart solution to improve writing competence including at secondary education level.

Another advantage of this research lies in the use of GPT Chat as the main learning media. Previous research often uses static learning technology, such as learning videos or digital modules that are unable to provide direct feedback or adjust the material to students' needs.

4. Conclusion

The use of Artificial Intelligence -based media has a significant influence on the critical thinking skills of class X students of UPT SMA Negeri 4 Luwu. The average value (mean) of students' critical thinking skills before treatment was in the low category, while after treatment it increased to the high category. The use of Artificial Intelligence-based media has a significant influence on the exposition text writing skills of class X students of UPT SMA Negeri 4 Luwu. The average value of students' exposition text writing skills before treatment was in the less category, while after treatment it increased to the sufficient category. The findings of this study also emphasize that the integration of Artificial Intelligence technology in learning can create learning experiences that suit the needs of students in the digital era. This new finding opens up opportunities for further research, such as the use of other Artificial Intelligence media, for example, Perplexity, Claude, Gemini and so on and in other skills (for example speaking or reading) or at other levels of education.

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