

The effectiveness of inquiry-based learning towards eleventh graders reading comprehension on analytical exposition text

Efektivitas pembelajaran berbasis inkuiri terhadap pemahaman membaca siswa kelas sebelas pada teks eksposisi analitis

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ABSTRACT

The purpose of this study was to determine the effectiveness of Inquiry-Based Learning on students' reading comprehension on analytical exposition text in the eleventh graders of MIPA of MAN 3 Pasaman Barat. The study was prompted by a number of issues that arise on a regular basis during the teaching and learning process, particularly in senior high school. The key issue that will be addressed in this study is the usage of teacher-centered learning, which prevents students from actively participating in the learning process. The experimental research was used in this study. The participants in this study were the eleventh graders of MIPA of MAN 3 Pasaman Barat. This study's sample consisted of 35 students from the XI MIPA 1 class as the experimental class and 35 students from the XI MIPA 2 class as the control class. According to the findings of this study, the mean score post-test experiment class was 68.15, whereas the control class was 64.07. As a result, the experimental class outperformed the control class. The reading ability of students was assessed using the t-test, which yielded $T_{\text{calculated}} = 2.13$ and $T_{\text{table}}(0.95:62) = 1.676$ at a 95% confidence level. It can be concluded that $t_{\text{calculated}} > t_{\text{table}}$, as H_0 was rejected and H_1 was accepted. Thus, inquiry-based learning had a significant effect towards students' reading comprehension of analytical exposition text.

Keywords: Reading comprehension; analytical exposition text; inquiry-based learning

ABSTRAK

Penelitian bertujuan untuk mengetahui keefektifan *inquiry-based learning* terhadap pemahaman membaca siswa pada *analytical exposition text* pada siswa kelas XI MIPA MAN 3 Pasaman Barat. Penelitian ini didorong oleh beberapa masalah yang sering muncul dalam proses belajar mengajar, khususnya di sekolah menengah atas. Masalah utama yang akan dibahas dalam penelitian ini adalah penggunaan pembelajaran yang berpusat pada guru, yang menghambat siswa untuk berpartisipasi aktif dalam proses pembelajaran. Penelitian eksperimental digunakan dalam penelitian ini. Partisipan dalam penelitian ini adalah siswa kelas XI MIPA MAN 3 Pasaman Barat. Sampel penelitian ini terdiri dari 35 siswa dari kelas XI MIPA 1 sebagai kelas eksperimen dan 35 siswa dari kelas XI MIPA 2 sebagai kelas kontrol. Berdasarkan hasil penelitian ini, nilai rata-rata *post-test* kelas eksperimen adalah 68,15, sedangkan kelas kontrol adalah 64,07. Hasilnya, kelas eksperimen mengungguli kelas kontrol. Kemampuan membaca siswa dinilai dengan menggunakan uji-t, yang menghasilkan $T_{\text{hitung}} = 2,13$ dan $T_{\text{tabel}}(0,95:62) = 1,676$ pada tingkat kepercayaan 95%. Dapat disimpulkan bahwa $t_{\text{hitung}} > t_{\text{tabel}}$, karena H_0 ditolak dan H_1 diterima. Dengan demikian, *inquiry-based learning* memiliki pengaruh yang signifikan terhadap pemahaman membaca siswa terhadap *analytical exposition text*.

Kata kunci: Pemahaman membaca; *analytical exposition text*; *inquiry-based learning*

1. INTRODUCTION

Reading is the process of gaining meaning, information, or ideas from a text. Reading is done to gain an understanding and comprehension of a text. To attain the goal, a reader should thoroughly interact with a written material. Reading, according to (Snow, 2002), is a process of extracting and producing meaning through interaction and involvement with written language. In other words, the words extracting and constructing underline the importance as well as the inadequacy of the text as a determinant of reading comprehension.

Reading comprehension is the process by which a reader discovers or obtains the meaning of a text. Reading comprehension entails much more than readers' responses to the text. Readers' prior knowledge is also vital in helping them understand and appreciate the facts and concepts in a written text. As a result, reading comprehension is one of the English abilities that students should acquire, particularly in senior high school. Reading comprehension, according to (Block et al., 2004), is an active process controlled by purposeful thinking that helps readers to draw connections between their own thinking processes, the textual content, and their own knowledge, expectations, and objectives for reading. To put it briefly, reading comprehension requires readers to think in order to interact with the material. In this scenario, the thinking process includes readers' prior knowledge, expectations, and reading goals.

Students in senior high school are expected to understand the books. Based on the standard competence in the eleventh grade syllabus known as "*Kurikulum 13*," one of the texts that students should memorize is analytical exposition text. Analytical exposition text is a text that provides information about the writer's opinion together with evidences, facts, and figures to back up his or her point of view. It is also a piece that elaborates on the writer's thoughts on the phenomenon in question. Its goal is to persuade the reader that the notion is significant.

Analytical exposition text, according to (Anderson & Anderson, 1997), is a sort of text that is designed to persuade readers that something should be in case. Furthermore, (Siahaan & Shinoda, 2008) analytical exposition is a sort of argumentation text in which the text provides a comprehensive author's reasoning about a current situation. Its social function is to persuade the reader that the concept is significant. There are three generic structures of analytical exposition text, according to (Gerot & Wignell, 1994), they are; initial thesis. Position, which introduces the issue and conveys the writer's position, is included in the thesis. The preview section then explains the main points to be presented. Second, consider the argument. Arguments include: point, which restates the major argument given in the preview. Following that, elaboration builds and supports each point/argument. Reiteration is the third step. The writer's position is restated through reiteration.

Furthermore, when teaching students to read analytical exposition texts, the teacher should utilize or develop an appropriate technique to ensure that the students grasp the text well. Inquiry-Based Learning is one strategy that teachers might employ. According to (Alberta, 2004) inquiry-based learning is a process in which students actively participate in their classroom, formulate research-informed questions, and then develop new understanding, meaning, and knowledge. Furthermore, Lane states in (Grace et al., 2021) that the inquiry-based learning approach actively engages students in explorations of facts, issues, and questions linked to a curricular subject. Assignments and activities in an inquiry-based learning classroom can be designed such that students can work alone or in groups to solve problems related to both classroom work and fieldwork.

There have been several earlier studies on inquiry-based learning in teaching reading; for example, (Wahab & Terasne, 2020) did a study named "The Effect of Inquiry-Based Learning on Students' Critical Thinking in Reading." The purpose of this study was to

determine the significant influence of Inquiry-Based Learning on third-semester students of the Faculty of Education and Education of Science at Qamarul Huda University, Bagu, Central Lombok, in the academic year 2019/2020. The data analysis revealed that third-semester students from the Faculty of Education and Education of Science at Qamarul Huda University in Bagu, Central Lombok, scored highly on the post-test after being exposed to Inquiry-Based Learning. This suggests that Inquiry-Based Learning had a major impact on students' critical thinking while reading. It was demonstrated by the fact that the lowest and highest pre-test scores were 30 and 50, respectively, whereas the lowest and highest post-test scores were 35 and 65. The alternative hypothesis was then accepted as a consequence of hypothesis testing. It was demonstrable that the t_{test} outperformed the t_{table} , with the t_{test} scoring 3.81 and the t_{table} scoring 1.753 in df 17 with a significant 0.05.

Second, the study "The Effectiveness of Inquiry-Based Learning on Reading Skills at SMAN I Lembang: Kurikulum Merdeka" was conducted by (Grace et al., 2021). The purpose of this research is to determine the impact of inquiry-based learning on students' reading skills. The researcher use an experimental research design to achieve the study goal. According to this study, inquiry-based learning is more successful than traditional learning. The experimental average is 78,08, while the control average is 71,17. It suggests that reading is an effective method of teaching reading. It is suggested that all teachers use this method as an alternative method of teaching reading at SMAN I Lembang.

So, this study investigated "The Effectiveness of Inquiry-Based Learning towards Students' Reading Comprehension on Analytical Exposition Text at Eleventh Grader of MIPA of MAN 3 Pasaman Barat."

2. RESEARCH METHOD

Research Design

This study is designed as a quasi-experiment. "In quasi-experimental research, the researcher tests the hypothesis to determine the cause and effect relationship," according to (Gay et al., 2009). This study controlled other variables while manipulating at least one independent variable and observing the effect of two variables." The goal of this study is to determine the effect of inquiry-based learning on students' reading comprehension on analytical exposition text at MAN 3 Pasaman Barat eleventh graders. This study involved two courses, one serving as an experimental class that will be treated through inquiry-based learning and the other conventional technique/traditional technique. Although both classes will be treated differently, the topic, duration, and teacher for each classes are the same.

Population and Sample

According to (Gay et al., 2009) population is the group of interest to the writer, the group to which the study's results should be generalized. The participants in this study are MIPA students of MAN 3 Pasaman Barat. There were 70 students in total. They are classified into three groups. The following graph clearly shows the number of students:

Table1. The Population of the Research

No.	Classes	The number of students
1.	XI MIPA 1	35 Students
2.	XI MIPA 2	35 Students
Total		70 Students

Furthermore, (Gay et al., 2009) states that a sample is a group of individuals chosen for a research in such a way that the individuals reflect a subset of the larger population from which they were drawn. In this study, two classes are sampled using cluster random sampling.

This study used cluster sampling to randomly choose intact groupings rather than individuals. Furthermore, like with other forms of sampling methodologies, educational

research typically encountered difficulty in selecting and assigning individual participants. Individual data cannot be separated because it has been decided as classes (Lorraine R. Gay, Geoffrey E. Mills, 2011). The three courses with the identical background knowledge and reading ability are chosen at random. They are chosen by writing the name of each class on four separate little pieces of paper, shaking them, and placing them on hands. The first small piece of paper is given to the experimental group. The second is designated for the control group. In this study, the other is not allocated.

Data Collection

The reading test was utilized as the tool in this study to collect data. This study delivered the test to the students so that they could try out the instrument. Following that, the researcher treated both classes. The experimental class was taught using the inquiry technique, whereas the control class was taught using the traditional technique. The researcher performed a post-test after administering the medication. The students were required to read and comprehend the analytical exposition material. Following that, the students were asked to answer several questions based on the analytical exposition text provided in order to assess their comprehension skills. Finally, the researcher gathered the test in order to assess students' reading comprehension capacity in analytical exposition text.

Data Analysis

After receiving the results of the reading comprehension test. The following steps were used in the research to examine the data:

1. Normality Measurement

Normality measurement seeks to evaluate if a class's contribution is normal or aberrant. To determine normality, this study employed the following formula devised by (Sudjana, 2005):

$$z_i = \frac{x_i - \bar{x}}{S}$$

Where:

x = the mean

S = Standard deviation

x_i = Student's writing ability

z_i = Normality of the instrument

To calculate the standard deviation, the following formula that proposed by (Sudjana, 2005) was used as follow:

$$S = \sqrt{\frac{n \sum X_i^2 - (\sum X_i)^2}{n(n-1)}}$$

Where:

S = Standard deviation

n = Number of students

$\sum X_i^2$ = Sum square of students score

In calculating the average value score, the following formula was used

$$\bar{X} = \frac{\sum X}{N}$$

Where:

\bar{X} = The mean of students' score

$\sum X$ = Sum of students' score

N = The number of students

2. Homogeneity Measurement

Measuring homogeneity was proposed to determine whether or not both samples have homogeneity variations. This study employed the F ratio formula proposed by (Sudjana, 2005) to assess it. The following is the formula:

$$F = \frac{S_1^2}{S_2^2}$$

Where:

S_1^2 = Variances of the higher score

S_2^2 = Variances of the lower score

F = Ratio between two variables

If $F_{\text{calculated}} \leq F_{\text{table}}$, it signifies that the data distribution has the same variances or is homogeneous. If, on the other hand, $F_{\text{calculated}} > F_{\text{table}}$, it indicates that the data distribution does not have the same variances or is not homogeneous.

3. Testing of significance

The level of significance was used in this research $\alpha = 0,05$, $df = n_1 + n_2 - 2$

4. Testing the hypothesis

To test the null hypothesis whether it will be rejected or will be received, the researcher used the test formula that is proposed by (Sudjana, 2005), the formula is follow:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{S \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

Where:

n_1 = the number of students in experimental group

n_2 = the number of students in control group

\bar{X}_1 = the mean scores of experimental group

\bar{X}_2 = the mean scores of control group

S = Standard deviation

\bar{x}_2 = the mean score of control group

3. RESULTS AND DISCUSSION

1. Result

This study pre-tested the entire population to determine the homogeneity and fundamental skill of the sample that was chosen. Table 2 shows the results of the analysis of students' pre-test score

Table2. The Data of Students' Pre-test Score

Class	N	\bar{x}	S	S ²
XI MIPA1	35	19.78	5.74	32.95
XI MIPA 2	35	14.52	3.74	13.98

This study assessed the students' pre-test scores and obtained the sample, which included class XI MIPA 1 as the experimental class and class XI MIPA 2 as the control class. Both the experimental and control classes of 35 students participate in the teaching and learning process.

Table3. The Data of Students' Post-Test Score

Class	N	\bar{x}	S	S ²
Experiment	35	63.59	5.91	34.93
Control	35	60.1	5.79	33.52

This study examined the data's mean score, standard deviation, and variance based on the post-test results. It can be concluded that the experimental class, which was taught using inquiry-based learning, outperformed the control class, which was taught using traditional teaching techniques.

This study employed one tails test statistical analysis to reach a conclusion on the outcome of this study. The information might be distributed normally and uniformly. The study assessed the data using statistical methods to determine its normality and homogeneity.

a. Normality measurement

The study obtained data from both courses in order to assess the normalcy of the data on students' reading analytical exposition text capacity on experimental and control classes. The experimental class yielded the calculated normality coefficient $I_0 = 0.1535$ at the 95% significance level, and the table normality coefficient $I_t = 0.195$, indicating that $I_0 > I_t$. $I_0 = 0$. and $I_t = 0.2270$ are the data from the control class. It denotes that $I_0 < I_t$. According to the data analysis, this study found that the data from both the experimental and control classes were regularly distributed.

b. Homogeneity measurement

The study used the test of homogeneity to assess the variance of the data of students' reading test scores in both the experimental and control groups. At the significance level of 0.05, the researcher obtained the data $F_{\text{calculated}} = 0.343$. $F_{\text{table}}(0.95;26;26) = 1.96$, implying that $F_{\text{calculated}} < F_{\text{table}}$. As a result, both the experimental and control groups had the same variance.

Table4. The Data of Students' Homogeneity

Class	N	(α)	Fc	Ft	Variances
XI MIPA 1	35	0.05	1.03	1.94	Homogenous
XI MIPA 2	35	0.05			

c. Hypothesis Testing

The researcher used statistical analysis to determine whether there is a difference in students' reading analytical exposition text skills in the experimental and control groups.

$T_{\text{calculated}} = 1.28$ and $T_{\text{table}}(0.95:52) = 1.676$ were obtained by the researcher. Finally, H_0 is accepted and H_1 is rejected. It means that students' reading ability utilizing the inquiry technique is superior to students' reading ability using the usual teaching technique. In other words, the inquiry technique has a good effect toward students' reading skills.

Table5. Hypothesis

Class	N	(α)	t_c	t_t	Variances
XI MIPA 1	35	0.05	2.13	1.676	H0 was rejected and
XI MIPA 2	35				Ha was received

2. Discussion

This study examined the effect of inquiry-based learning on students' comprehension of analytical exposition text. This study used statistical analysis to analyze it. The researcher obtained the results $T_{\text{calculated}} = 1.28$ and $T_{\text{table}}(0.95:62) = 1.676$ at the 95% significance level. As a result, $T_{\text{calculated}} > T_{\text{table}}$, indicating that there was a favorable influence on students' reading ability taught through inquiry-based learning. The findings indicated that inquiry-based learning is more effective than traditional teaching techniques in improving students' comprehension. Related to the study "The Effect of Inquiry-Based Learning on Students' Critical Thinking in Reading" (Wahab & Terasne, 2020). In his research, third-semester students from the Faculty of Education and Education of Science at Qamarul Huda University in Bagu, Central Lombok, achieved good post-test scores after being treated with Inquiry-Based Learning. This suggests that Inquiry-Based Learning had a major impact on students' critical thinking while reading. It was demonstrated by the fact that the lowest and highest pre-test scores were 30 and 50, respectively, whereas the lowest and highest post-test scores were 35 and 65. The alternative hypothesis was then accepted as a consequence of hypothesis testing. It was demonstrable that the t-test outperformed the t-table, with the t_{test} scoring 3.81 and the t_{table} scoring 1.753 in df 17 with a significant 0.05.

Furthermore, (Grace et al., 2021) titled "The Effectiveness of Inquiry-Based Learning on Reading Skills at SMAN I Lembang: Kurikulum Merdeka" This study also discovered that inquiry-based learning is more successful than traditional learning. The experimental average is 78,08, while the control average is 71,17. It suggests that reading is an effective method of teaching reading. It is suggested that all teachers use this method as an alternative method of teaching reading at SMAN I Lembang.

The Students in an experimental class assist one another in accurately decoding and organizing words in an analytical exposition text. As a result, they respond to task demands with the necessary cognitive abilities. As a result, students in the experimental class who have adequate knowledge of a task may be able to elaborate on it to their peers in either foreign language. Furthermore, the experimental class allows students to choose their own question to ask or problem to solve, inspiring them to take responsibility for learning what is required to pursue their topic. However, the researcher encountered some difficulties during the investigation, one of which was clarifying the way to teach the students. To address this issue, the researcher provided an explanation using an example.

To summarize, based on the findings of this study and two prior studies, inquiry-based learning is an excellent method for teachers to utilize when teaching reading in order to increase not just students' aptitude or reading comprehension, but also students' critical reading.

4. CONCLUSION

Based on the findings and discussion, it is possible to conclude that the experimental class, which was taught using inquiry-based learning, outperformed the control class, which was taught using standard teaching techniques. Inquiry-based learning improved students' reading comprehension of an analytical exposition text. Inquiry techniques can help improve student motivation and perception during the teaching and learning process. Inquiry-based

learning is the process through which students actively participate in their classroom, formulate research-informed questions, and then develop new understanding, meaning, and knowledge (Alberta, 2004). According to the findings of this study, it can be suggested that English teachers should employ the appropriate strategy to teach material/subjects such as inquiry-based learning. The next researcher will carry on this research in a different setting in the future

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