The Impact of Pre-Question Techniqueon Students' Reading Comprehension Achievment at SMA N 1 Pegajahan

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Abstrak
Tujuan dari penelitian ini untuk menginvestigasi dampak teknik pre-question terhadap prestasi pemahaman membaca siswa di SMA N 1 Pegajahan. Penelitian ini menggunakan desain eksperimen semu yang melibatkan dua kelas : Kelas kontrol X-2 dan kelas eksperimen X-4, masinng-masing terdiri dari 36 siswa. Kelas kontrol diajarkan menggunakan metode konvensional, sementara kelas eksperimen diberi teknik pre-question selama pembelajaran membaca. Hasil penelitian menunjukkan adanya perbedaan signifikan pada skor post-test antara kedua kelompok. Nilai rat-rata kelas kontrol adalah (77,22) sedangkan standar deviasi (16,01). Sedangkan kelas eksperimen memilii nilai rata-rata (95,57) dengan standar deviasi (7,71). Analisis uji-t menunjukkan bahwa nilai t-hitung melebihi nilai kritis t-table (6.6526) untuk derajat kebebasan (70) pada taraf signifikansi (0,05) yang mengonfirmasi bahwa teknik pre-question memiliki efek positive yang signifikan secara statistik terhadap prestasi pemahaman membaca siswa.

Kata Kunci: Teknik pre-question, Pemahaman membaca, Prestasi

Abstract
The aim of this research was to investigate the impact of the pre-question technique on students' reading comprehension achievement at SMA N 1 Pegajahan. This research used a quasi-experimental design involving two classes: control class X-2 and experimental class X-4, each consisting of 36 students. The control class was taught using conventional methods, while the experimental class was given pre-question techniques during reading learning. The results showed that there were significant differences in post-test scores between the two groups. The average value of the control class is (77.22) while the standard deviation is (16.01). Meanwhile, the experimental class has an average value (95.57) with a standard deviation (7.71). The t-test analysis shows that the calculated t-value exceeds the t-table (6.6526) critical value for degrees of freedom (70) at the significance level (0.05) which confirms that the pre-question technique has a statistically significant positive effect on students' reading comprehension achievement.

Keywords: *Pre-question technique, Reading comprehension, Achievement*

Introduction

Reading ability is one of the fundamental skills that is crucial in the learning process, especially in languange learning. According to Santoso (2019), Reading involves not only recognizing word but also understanding the overall meaning of the text. At the secondary school level one type of the text thatis taught is the narrative text. Narrative texts serve to tell a story with a sequence of eventstatare organized and logical (Sugiyono,2021).

Narrative text is more interesting for the students. Most of narrative is fantasticstory, so it will also increase the students' motivation and interest in reading class. Narrative Text, A type of text that tells a story with a logical sequence of events, typically including orientation, complication, and resolution (Wahyuni,2022).

This Research fund the problem of the study that is because the less of the studennts to comperend the narrative text.

Therefore, there is a need for this research which aims to help students understand reading comprehension by using the pre-question technique. Then after the author gave them the text, their scores increased, especially in the experimental class, which means the students understood it well after looking at their post test results.

This study aims to evaluate the impact of pre-question techniques on reading comprehension achievement among students at SMA N 1 Pegajahan. By conducting this research, it is hoped that it will provide deeper insights into the effectiveness of pre-question techniques in a local educational context and contribute to the development of more effective teaching methods to enhance students' reading abilities. The study also seeks to offer evidence-based recommendations for educators and policymakers at SMA N 1 Pegajahan to optimize existing teaching strategies and achieve better learning outcomes.

Literature Review dan Hypotesis
    a.   Literature review

According Black Swan Theory (Nassim Nicholas Taleb, 2007) : Nassim Nicholas Taleb, a statistician and risk analyst, articulated the Black Swan theory, which describes events that are extremely rare, have a massive impact, and are often retionalized in hind sight. His 2007 book, "The Black Swan: The impact of the Highly Improbable," Brought widespread attention to this concept.

The hypothesis of this research will be as follows: "There will be a positive effect of giving the pre-questioning technique on students' reading comprehension achievement."

    b.   Hypotesis
       1.   Null Hypothesis (H0): The pre-question technique will not have a significant impact on students' reading comprehension achievement at SMA N 1 Pegajahan. ($\mu1$ will be equal to $\mu2$)
       2.   Alternative Hypothesis (H1): The pre-question technique will have a significant impact on students' reading comprehension achievement at SMA N 1 Pegajahan.($\mu1$ will be different from $\mu2$)
          Where:

$\mu1$: will be the mean reading comprehension achievement of students taught with the pre-question technique.

$\mu2$: will be the mean reading comprehension achievement of students taught without the pre-question technique.

    t-test

The t-test is a statistical analysis techniques used to test a comperative hypothesis about whether there is a significant differences between the means of two idependent samples. According to Sugiyono (2018), The t-test is used in experimental research to compare two groups, usually the experimental and control groups, tosee the impact of a treatment.

The basic formula for the t-test used in this study is:

$$ t = \frac{\bar{x}1 - \bar{x}2}{\sqrt{\frac{(n_1-1)s_1^2 + (n_2-1)s_2^2}{n_1+n_2-}(\frac{1}{n_1}+\frac{1}{n_2})}} $$

Where :
- $\bar{x}1$ is the mean of the experimental class
- $\bar{x}2$ is the mean of the control class
- $s_1{}^2$ is the variance of the experimental class
- $s_2{}^2$ is the variance of the control class
- n_1 is the number of students in the experimental class
- n_2 is the number of students in the control class

Degrees of Freedom (df)

Degrees of freedom (*df*) is an important parameter in the t-test, used to determine the critical value from the t-distribution. According to Sudjana (2005), the degrees of freedom are calculated as:

$$df = (n_{1+}n_2 - 2)$$

Research Metodology

This research method that will be used in this study is quantitative research. According to Muijs (2021), quantitative research was a scientific method that involved the collection and analysis of numerical data, which could be used to test hypotheses, find patterns, and make generalizations. Therefore, it used quantitative methods because it measured the impact (cause-effect relationship) of a certain strategy on students' learning outcomes.

Then, This research uses a quasi-experimental design with a non-equivalent control group design model. This design involved two groups, namely the experimental group which was treated using pre-questioning techniques, and the control group which was taught using the discovery learning method. Each group was tested with a pre-test and post-test to evaluate changes in students' narrative text comprehension abilities. According to sugiyono (2017, p. 77), the quasi-experimental design had a control group, but it was not entirely able to control external variables that influenced the implementation of the experiment.

Table 3.1
Types of Experimental Research

Group	Pre-test	Treatment	Post-test
Experimental Group	✓	Using Pre-Question Technique	✓
Control Group	✓	Without Pre-Question Technique	✓

Research Finding dnd Discussion

a. Research Finding

The research was conducted at SMA N 1 Pegajahan. The location at Jl. Bengabing Kec.Pegajahan Kab.Serdang Bedagai Sumatera Utara It was carried out on the tenth grade of SMA N 1 in 2024/2025 academic year. This study was conducted from July until August. There were two classes were selected as sample in this experiment in which the students participated in two types of tests; pre-test and post-test they were class of X-2 as the control class and experimental class of X- 4. The students of the experimental and control class were 72 students.This study was conducted,face-to-face in the class. Teaching and learning activities were carried out face-to-face

The following parts showed the general description of students' scores in experimental class and control class. The description was divided into some sections: pre-test scores and post-test scores.

b. The result Pre-test and Post-test

To determine the result, the researcher compared the pre-test results of the experimental group and the control group. It can be concluded that the average score of the Control group was 79, 43 and the average score of the Experiment group was 95,57.

Table 4.5
The Mean Scores of Students

Meeting	Pre-Test	Post-Test
Experimental Group	**49,02**	**95,57**
Control Group	**49,17**	**79.43**

After knowing the test result, the researcher compared the post-test results of the experimental group and the control group. It can be concluded that the average score of the experimental group was 95,57 and the average score of the control group was 77,22. It means that the use of the four-square Reading method has effects on Reading.

In this discussion, the researcher calculated the pre-test result of Control group.Narrative text for students.

Table 4.6
Result of Pre-Test from Control Group

The Result	Control Group
Highest Score	60
Lowest Score	40
Median	50
Mean	49.17
Mode	50
Standard Deviation	5,86
Total Score	1770

From the score table above, in the control group it can be seen the highest score of students' Reading Comprehension (H) was 60, the lowest score (L) was 40, the median (Me) was 50, the mode (Mo) was 50, and the total score of students' Reading Comprehension (T) was 1770. The mean (M) was 49.16 the deviation standard (SD) was 5.54, and the variance was 30.71.

Table 4.6
Result of Pre-Test from Experimental Group

The Result	Experimental Group
Highest Score	60
Lowest Score	40
Median	52
Mean	49.02
Mode	50
Standard Deviation	26.89
Total Score	1765

From the score table above, in the experimental group it can be seen the highest score of students' Reading Comprehension (H) was 60, the lowest score (L) was 40, the median (Me) was 50, the mode (Mo) was 50, and the total score of students' Reading Comprehension (T) was 1765. The mean (M) was 49.02, the Standard Deviation(SD) was 10.40, and the variance was 108.31.

Table 4.7
The Result of Pre-test from Experimental Group and Control

The Result	Control Group	Experiment Group
Highest Score	60	60
Lowest Score	40	40
Median	50	52
Mean	49.17	49.02
Mode	50	50
Standard Deviation	5.86	26.89
Total Score	1770	1765

In this discussion, the researcher calculated the post-test result of Control group and Experimental group.

Table 4.8
Result of Post-Test from Control Group

The Result	Control Group
Highest Score	100
Lowest Score	45
Median	82.5
Mean	77.22
Mode	80
Standard Deviation	16.01
Variance	350.63
Total Score	2780

From the score table above, in the control group, the highest score of students' Reading comprehension (H) was 100, the lowest score (L) was 45, the median (Me) was 80, the mode (Mo) was 80, and the total score of students' Reading comprehenson (T) was 2780. The mean (M) was 77.22, the deviation standard (SD) was 15.83, and the variance was 350.63.

Table 4.9
Result of Post-Test from Experimental Group

The Result	Experimental Group
Highest Score	100
Lowest Score	75
Median	97.5
Mean	95.57
Mode	100
Standard Deviation	7.71
Total Score	3345

From the score table above, it can be seen in the Experimental group, the highest score of students' Reading Comprehension (H) was 100, the lowest score (L) was 75, the median (Me) was 100, the mode (Mo) was 100, and the total score of students' Reading Comprehension (T) was 3345. The mean (M) was 95.57. The deviation standard (SD) was 7.35 and the variance was 54.07.

The calculations of the mean score of experimental group and control group were 95.57 and 77.22. If we compare the two means, it was clear that the mean of the experimental group is higher than the mean of the control group. It indicated that the treatment is effective. To make the analysis easier, the step is as follows:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{(n_1-1)s_1^2+(n_2-1)s_2^2}{n_1+n_2-}(\frac{1}{n_1}+\frac{1}{n_2})}}$$

Note:

t	= t value
$\overline{x_1}$	= 95.57
$\overline{x_2}$	= 77.22
s_1^2	= 54.07
s_2^2	= 250.83
n_1	= 36
n_2	= 36

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{(n_1-1)s_1^2+(n_2-1)s_2^2}{n_1+n_2-2}(\frac{1}{n_1}+\frac{1}{n_2}}}$$

$$t = \frac{95.57 - 77.22}{\sqrt{\frac{(36-1)54.07+(36-1)250.83}{36+3\ -2}(\frac{2}{36})}}$$

$$t = \frac{18.35}{\sqrt{\frac{1.892,45+8.759.905}{70}(0.05)}}$$

$$t = \frac{18.35}{\sqrt{\frac{10.652.255}{70}(0.05)}}$$

$$t = \frac{18.35}{\sqrt{7.6085}} = \frac{18.35}{2.7683}$$

$$t = 6.6526$$

Based on theabove conclution, the calculated t-value 6.6526. According to Arikunto (2010), the t-test is widely used in educational research to compare learning outcomes between two groups. This formula allows researchers to determine whether the difference in means between two groupsis statically significant.

Degrees of freedom (df) is an important parameter in the t-test, used to determine the critical value from the t-distribution. According to Sudjana (2005), the degrees of freedom are calculated as:

$$df = (n_{1+}n_2 - 2) = (36 + 36 - 2) = 70$$

After getting the t-value, the researcher consults the critical value on the t-table to check whether the difference is significant or not. Before the experiment was conducted, the

level of significance of its use had been divided. The researcher used the 5% (0.05) significance level.

The number of subjects in this research is 72 students, with a degree of freedom (df) of 70. The degree of freedom can be found using the formula n-2. The critical value on the t-table was 2.00 for a 5% significance level and 70 degrees of freedom.

If t $_{value}$>t$_{table}$ the alternative hypothesis was accepted. It means there was significant effect of teaching Reading comprehension using Pre-Questions Technique without using Pre-Questions Technique. If t $_{value}$< t $_{table}$ null hypothesis was rejected. It means there was no significant effect of teaching Reading Comprehension using Pre-Questions Techniquethan without it.

From the result calculation above, it can be concluded that the t-table was 2.00. The obtained t-value was 6.6526. So, the t-value is higher than the critical value. The obtained t-value is higher than the critical value on the table (6.6526>2.00). As the result, this study can be said valid and reliable.

As for the result above, the researcher concludes that it means there is a significant effect of the Pre-Questions Technique on students' Reading Comprehension in Narrative text. It can be seen that the students' scores got better by using the Pre-Questions Technique. This could be seen after comparing the scores of the pre-test (before using the Pre-Questions Technique) and the post-test (after using the Pre-Questions Technique).

Conclusion

In conclusion, the results of this study indicate that pre-question technique significaly improves students' reading comprehension achiement. The siffence in the mean scores between the experimental class (95.57) and the cotrol class (77.22) was statistically significant, as confirmed by the t-test result (t=6.6526, p > 0.05). this supports the hypotesis that the pre-question technique has a positive impact on students'reading comprehension. so there is a significant difference in the students achievement between those students who were taught Reading by Pre-question technique. There is effectiveness of Pre-Questions technique to improve the students' Reading skill. It can be concluded that the use of Pre-Questions technique in teaching Reading is effective to improve students writing skill at tenth grade in SMA Negeri 1 Pegajahan in the academic year 2024/2025.

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