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The Influence of Double Loop Problem Solving (DLPS) Technique to Teach Reading Comprehension Achievement of the Tenth Grade Students of SMA Negeri 1 Belitang Jaya

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Abstract

This thesis is entitled "The Influence of Double Loop Problem Solving (DLPS) Technique to Teach Reading Comprehension Achievement of The Tenth Grade Students of SMA Negeri 1 Belitang Jaya". The objective was find out whether or not there is any significance difference between the students who are taught by using Double Loop Problem Solving technique and the students who are taught by using conventional technique to teach reading comprehension achievement at the tenth grade students of SMA N 1 Belitang Jaya. The method of the study used quantitative research, and quasi experimental design. Therefore, there were two groups those were experimental group who are taught by using Double Loop Problem Solving technique and control group who are taught by using conventional technique, that was chosen by using purposive sampling to collecting the data, the population of this study were 120 students and sample were 60 students. The study was used multiple choice test as an instrument for collecting the data. The data obtained from Independent t-test analysis by using SPSS 25, between the result of post-test in experimental group and control group. Based on the calculation by using Independent t-test in SPSS 25, the writer found that value of $t_{obtained}$ is 4.906. with 5% sig. level for 2-tailed was 0.001(0.001 < 0.05), and the critical value t_{table} is 2.001. it showed that $t_{obtained}$ was higher than t_{table} (4.906 > 2.001). So, the null hypotheses (Ho) was rejected and alternative hypotheses (Ha) was accepted. It can be concluded that Double Loop Problem Solving technique was significant to teach reading comprehension achievement at the tenth grade students of SMA N 1 Belitang Jaya.

Keywords: Reading Comprehension, Double Loop Problem Solving technique.

INTRODUCTION

Reading is one of the basic skills that should be taught in all middle and high schools in Indonesia. This is one of the language skills that plays a very important role in educational or personal activities. "Reading is considered fundamental in the pursuit of education because it is a way of acquiring information. Reading offers many benefits to students, including: information, expand knowledge, and help generate new ideas" (Basri, 2018). As we know, classroom reading category activities focus on reading comprehension, so students must have accurate learning comprehension students should have good analytical skills as well as accurate reading comprehension to give them a good analytical understanding. Students are more likely to succeed in research when they have reading comprehension. "It is clear that the essential purpose of analysis is to make sense of the analytical material, and what teachers can do to facilitate analysis for students must be a good idea" (Basri,2018).

Reading comprehension is the procedure of expertise and constructing text. Veravague (2010:206) State reading is defined as a questioning technique in which a reader selects facts, information, or concepts from printed material. It determines the meaning of what the author is trying to convey, determines its relationship to existing knowledge, and assesses the suitability and cost of achieving the learner's essential goals. While analytics in high school is still a talent that students stand out for, college students still struggle to learn about research, especially the understanding of analytics. Based on her experience when she did subject (PPL), the college students have low ability and studying achievement. It identified the problem as follows. The first is the students' have much less motivation in studying comprehension achievement, so they are passive in studying comprehension achievement. Seconds, many students are now not interested in the achievements of reading comprehension, and finally, many students have a small vocabulary and cannot understand. Therefore, the author wants to use Double-Loop Problem Solving (DLPS) to solved student problem as a studying classification approach to improve students' analyzing comprehension.

According to Huda (2013) states that the DLPS version is a variant of problem-primarily based analyzing that focuses on locating (causes) the main causal relationships of problem occurrence The Double Loop trouble fixing version (DLPS) is a problem-primarily based gaining knowledge of model like the trouble-based totally mastering (PBL), however there are a few variations. DLPS approach that obliges pretty various ranges of the reason for an problem, which includes the gadget of ways an problem happens. DLPS is commonly utilized for help a studying technique that welcome the scholars to be dynamic in sporting activities parent out a way to educate. Double Loop problem solving (DLPS) makes a speciality of group studying comprehension. DLPS trying to achieve the root of the problem to stop similarly confusion. DLPS involves the modification of desires or decision-making guidelines within the mild of experience. the primary loop makes use of the goals or choice-making guidelines, the second one loop allows their amendment, and for that reason it's far known as "double loop". DLPS acknowledges that the way a problem is described and solved problem (Basri, 2018). Double Loop problem solving (DLPS) technique in instructing analyzing is the location the students paintings in team and have a look at a analyzing textual content and answering a questions related to the text with a training from the trainer based on 5 steps of DLPS; identifying the trouble, detecting direct purpose, comparing success from transient solution, locating out to what trouble root analysis is need, and designing problem root answer (designing root reason solutions) (Rahmani, 2013).

Based on the problem above, it is encouraged in doing a study related to the students' reading comprehension achievement. The sample student used for this study would take from the tenth grade students of SMA N 1 Belitang Jaya. The reason why the writer chooses this topic, because she wants to know There is any significant difference between the students who are taught by DLPS technique and the students who are taught by conventional technique in reading comprehension achievement of the tenth grade students of SMA Negeri 1 Belitang Jaya. So the study entitled "**The Influence of Double Loop Problem Solving (DLPS) Technique to Teach Reading Comprehension Achievement of The Tenth Grade Students of SMA Negeri 1 Belitang Jaya** "

Based on the problem above, the objective of this study is to find out there is or not any significant difference between the students who are taught by DLPS Technique and the students who are taught by conventional technique in reading comprehension Achievement of the tenth grade students of SMA Negeri 1 Belitang Jaya..

METHOD

Quantitative methods were used in conducting this study. Mostly used experimentally. As argued by Creswell (2012), quasi-experiments involve assignment of participants to groups, but not random assignment. Quasi-experimental designs work very well because they are called compromise studies, a description when applied to many educational studies. The design includes an experimental and control group, both of which given a pre test and post test. In the experimental group, pre test and post test students were treated with the DLPS technique, whereas in the control group, pre test and post test students were treated with conventional techniques only. The design of the study is diagrammed as follow:

Table 1. Quasi Experimental Design
Pre- and Post-test Design

Class	Pre-test	Treatment	Post-test
C	O1	-	O2
E	O1	X	O2

(Sugiyono,2016)
Where :
C : Control class
E : Experimental class
O1 : Pre - test
O2 : post - test
- : Conventional Technique
X : Double Loop Problem Solving (DLPS) Technique

In the first step of this study, both experimental and control students would be given a pre-test to know their reading comprehension before giving treatment. Treatment was then given to the experimental group. Students in the experimental group were taught using DLPS technique, while the control group was taught using the

conventional technique. The next step would be given the students of experimental group and control group post-test to know their reading skill after giving treatment.

Variables of the Study

According to Sugiyono (2016), a research variable is something an author applies and studies in some way to obtain information about it and draw conclusions. There are two types of variables. They are dependent and independent variables. Creswell (2012) explained that the dependent variable is the attribute or characteristic that depends on or is influenced by the independent variable. In this study reading comprehension as the dependent variable and double-loop problem solving as the independent variable.

Population of the Study

According to Sugiyono (2017), a population is a generalization domain consisting of objects or subjects exhibiting certain properties or characteristics established by the author to learn and draw conclusions. Additionally, the population of this study is the tenth Grade Students of SMA Negeri 1 Belitang Jaya. The population draw in the Table 2.

Table 2. The Population of the Study

No	Class	Students
1	X MIPA 1	30
2	X MIPA 2	30
3	X MIPA 3	30
4	X SOSIAL	30
Total		120

Sources : *(SMA Negeri 1 Belitang Jaya 2021/2022)*

Sample of the Study

According to Arikunto (2010) "sample is part or representative of the population being studied". In this study two classes used as the sample. The sample would take by using purposive sampling is a taking sample of population randomly. The sample can be seen in Table 3.

Table 3. The Sample of the Study

No	Class	Group	Number of Students
1	X MIPA 1	Experimental	30
2	X MIPA 2	Control	30
Total			60

Technique for Collecting the Data

In this study collecting the data was used

Reading Comprehension Test

In the reading comprehension test, a pre-test and a post-test are conducted on the same material to evaluate the reading comprehension of the student. Prior to treatment, a pre-test will be conducted to check the student's reading comprehension. Post-test are given to students after treatment to assess their post-treatment reading skills.

In the reading comprehension test for students consisting of a 20-item test. The question type is multiple choice with five answers: a, b, c, d, and e. After the students took the test, the clerk took the total score from the results of the reading comprehension test.

Validity of the Test

The validity of the test material would have been checked by the content validity. Fraenkel (2012) states that 'validity is the most important idea to consider when preparing or selecting the equipment to be used'. Validity is meant to refer to the appropriateness, reasonableness, accuracy and usefulness of the conclusions drawn by the author. appropriateness was the most important consideration to consider when preparing or selecting equipment for use. A test specification table was used to find out if test items had a level of content validity.

Reliability of the Test

Fraenkel (2012) states, "Reliability refers to the consistency of the scores obtained, from administration of one device to another, and from one set of items to another. It refers to how consistent the of the score obtained,In this study the reliability of test materials is assessed by the internal consistency of reliability.

In this study, the internal consistency of reliability is estimated by his Cronbach's alpha. Confidence coefficient is a statistical formula used as an estimate of the reliability of a test, based on the number of items in the test, the mean, and the standard deviation.

Reliability coefficient of the test should be at least 0.60 and preferably higher. To know the reliability of the test items, it given try out test to students. It is trying out to the tenth grade students of MA Bustanul Ulum Wonotirto. After have try out the test items, it calculates and analyses the students' score to find out the reliability coefficient of test items.

Technique for Analyzing Data

Scoring of the test

In calculating the score of the students, would use the formula as follows:

$$\mathbf{s = \frac{B}{N} \times 100}$$

(Sumaryanta, 2015: 182)

Where:

S : The students score

B : The number of correct answer of students

N : The total items of the test**.**

Criteria of Score

The criteria of score was used to interpret whether the students are considering excellent, very good, good, sufficient, poor and very poor.

Table 4. Score criteria

Score	Categories
81-100	Excellent
71 – 80	Good
61 – 70	Enough
51 – 60	Poor
< 50	Very Poor

(Arikunto, 2002)

Analyzing of Independent T-test

To analyze the data in this study, independent t-test were used to compare post-test results between control and experimental groups, to determine whether there were significant differences in reading comprehension. Determine how double loop problem solving (DLPS) affects performance in reading instruction by comparing the performance of experimental and control groups using SPSS 25. And here are the steps to perform an independent-samples t-test:

1. Click **Analyze > Compare Means > Independent samples t-test**
2. On the Independent Samples t-test dialogue box, transfer the variables (Scores) into the Test Variable: box and the variable (technique) into the Grouping Variable: box
3. Click "media" in the Grouping Variable box, then click "Define Group". On the Define Group box, insert "1" into the Group 1, and insert "2" into the Group 2.
4. Click "Continue and OK".

RESULTS AND DISCUSSION

This section presents (1) findings and (2) discussion of the findings from the data analysis.

Findings

From this study, it was found that Using DLPS Technique towards Students' Reading Comprehension Achievement of the Tenth Grade Students of SMA Negeri 1 Belitang Jaya was significant. By applying this method, the students' scores made a progress. This can be seen from the results of student performance in the pre-test of the experimental and control groups and the results of student achievement in the post-test of the

experimental and control groups. Students in the experimental group had a mean pre-test score of 66.17. In the control group it was 56.83. Students in the experimental group had a mean post-test score of 81.50, compared to just 71.50 in the control group. Next, for more detail, it can be described as follows:

The Result of the Pre- test in the Experimental Group

The result of the pretest of reading comprehension after the test distributed to the students was shown in the Table 5.

Table 5. The Result of the Pretest in the Experimental Group

Students score in the pre- test of experimental group			
Students Number	Correct Answer	Incorrect Answer	Score
1	12	8	60
2	12	8	60
3	16	4	80
4	9	11	45
5	12	8	60
6	13	7	65
7	11	9	55
8	17	3	85
9	13	7	65
10	14	6	70
11	15	5	75
12	13	7	65
13	14	6	70
14	12	8	60
15	11	9	55
16	13	7	65

Students score in the pre- test experimental group			
Students Number	Correct Answer	Incorrect Answer	Score
17	13	7	65
18	14	6	70
19	10	10	50
20	13	7	65
21	12	8	60
22	12	8	60
23	12	8	65
24	16	4	80
25	13	7	65
26	16	4	80
27	14	6	70
28	15	5	75
29	13	7	65
30	16	4	80
Sum			1985
Mean			66,17
Median			65
Mode			65

The Result of the Post-test In the Experimental Group

The result of the post-test of teaching reading comprehension achievement after the test distributed to the students was shown in the Table 6.

Table 6. The Result of Post-test in the Experimental Gro

Students score in the post- test experimental group			
Students Number	Correct Answer	Incorrect Answer	Score
1	16	4	80
2	16	4	80
3	18	2	90
4	15	5	75
5	17	3	85
6	15	5	75
7	15	5	75
8	18	2	90
9	17	3	85
10	16	4	80
11	17	3	85
12	17	3	85
13	17	3	85
14	15	5	75
15	13	7	65
16	16	4	80

Students score in the post- test experimental group			
Students Number	Correct Answer	Incorrect Answer	Score
17	16	4	80
18	17	3	85
19	14	6	70
20	15	5	75
21	15	5	75
22	14	6	70
23	17	3	85
24	19	1	95
25	16	4	80
26	19	1	95
27	17	3	85
28	16	4	80
29	16	4	85
30	19	1	95
Sum			2445
Mean			81,5
Median			80
Mode			85

The Result of Pre-test in the Control Group

The result of the pretest of reading comprehension achievement after test distributed was shown in the Table 7.

Table 7. The Result Of The Pretest in the Control Group

students score in the pre- test control group			
Students Number	Correct Answer	Incorrect Answer	Score
1	12	8	60
2	9	11	45
3	11	9	55
4	13	7	65
5	13	7	65
6	12	8	60
7	9	11	45
8	8	12	40
9	13	7	65
10	11	9	55
11	12	8	60
12	13	7	65
13	14	6	70
14	11	9	65
15	10	10	50
16	12	6	60

students score in the pre- test control group			
Students Number	Correct Answer	Incorrect Answer	Score
17	11	9	55
18	12	8	60
19	10	10	50
20	11	9	55
21	13	7	65
22	10	10	50
23	9	11	45
24	10	10	50
25	12	8	60
26	9	11	45
27	10	10	50
28	10	10	50
29	15	5	75
30	14	6	70
Sum			1705
Mean			56,833
Median			57,5
Mode			60

The Result of Post-test in the Control Group

The result of the posttest of rading comprehension achievement after the test distributed to the students was shown in the Table 8.

Table 8. The Result of Posttest in the Control Group

Students score in the post- test control group			
Students Number	Correct Answer	Incorrect Answer	Score
1	15	5	75
2	11	9	55
3	13	7	65
4	17	3	85
5	15	5	75
6	15	5	75
7	12	8	60
8	11	9	55
9	16	4	80
10	14	6	70
11	15	5	75
12	15	5	75
13	16	4	80
14	14	6	70
15	13	7	65
16	15	5	70

Students score in the post- test control group			
Students Number	Correct Answer	Incorrect Answer	Score
17	13	7	65
18	14	6	70
19	13	7	65
20	14	6	70
21	15	5	75
22	14	6	70
23	12	8	60
24	15	5	75
25	17	3	85
26	14	6	70
27	13	7	65
28	15	5	75
29	17	3	85
30	17	3	85
Sum			2145
Mean			71,5
Median			70
Mode			75

Statistical Analyses
There was statistical analyses in this study, that was the difference analysis on the experimental group and the control group by using independent sample t-test.

The Result of Independent Sample t-test
Based on the student's score both obtained in the post-test of experimental group and control group, the independent sample t-test was used to find out there is or not any significant difference between the students who are taught by using DLPS technique and the students who are taught by using conventional technique in teaching reading comprehension achievement. The data are shown in Table 9.

Table 9. The Result of Independent t-test in the post-test of experimental class and control class

		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Significance		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						One-Sided p	Two-Sided p			Lower	Upper
Reading Comprehension Achievement	Equal variances assumed	.309	.581	4.906	58	<,001	<,001	10.000	2.038	5.920	14.080
	Equal variances not assumed			4.906	57.298	<,001	<,001	10.000	2.038	5.919	14.081

DISCUSSION
Based on the above explanations, it can be concluded that there was a significant difference in the post-test results of the students in the experimental and control groups. The experimental group had a mean score of 81.5 with a maximum score of 95 and a minimum score of 65, while the control group had a mean score of 71.5 with a maximum score of 85 and a minimum score of 55.

Furthermore, based on Levene's test, the value of t-obtained in the table was 4.906. 5% signed. The two-sided level was 0.001 (0.001 < 0 > 2.001). This is because the t-obtained value was higher than the t-table value. As a result, the null hypothesis (Ho) was rejected and the alternative hypothesis (Ha) was accepted. This indicates that there is a significant difference between students taught using the DLPS technique and students who are taught using the conventional technique in reading comprehension achievement of the tenth grade students at SMA N 1 Belitang Jaya.

CONCLUSION
Based on the analysis of the data, we found that student achievement differs before and after the test. Students' achievement on the post test was higher than that of the students on the pre test. In the experimental group, In the experimental group, the mean score in the pre-test that shown only 66.17, the highest score was 85 reached by 1 students and the lowest score was 45 reached by 1 students. After the treatment done by using DLPS technique and the reading comprehension test that similar to those in the pre test, their mean score increased to 81.5, the highest score was 95 reached by 3 students and the lowest score was 65 reached by 1 student.

On the other hand, in the control group students taught using conventional technique, the students got different achievement from that in the experimental group. The highest score in the post-test of the control group was 85 reached by 4 students and the lowest score was 55 reached by 1 student. The students' average score was 71.5.

Independent t-test formula results were obtained with post test for the experimental and control group, in the Levene's test the value of $t_{obtained}$ in the table was 4.906. with 5% sig. level for 2-tailed was 0.001(0.001 < 0.05), and the critical value t_{table} is 2.001. it showed that $t_{obtained}$ was higher than t_{table} (4.906 > 2.001). Since the value of to-obtained was higher than the value of t-table. Since the value of to-obtained was higher than the value of t-table. Consequently, the null hypothesis (Ho) was rejected and the alternative hypothesis (Ha) was accepted. It meant that there was any significant differences between students who are taught by using DLPS technique and the students who are taught by using conventional technique in reading comprehension achievement of the tenth grade students at SMA N 1 Belitang Jaya.

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