A Comparative Study on Teaching Reading Through Thinking Aloud Pair Problem Solving and Problem Posing Model

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Abstract: This research compared the implementation of Thinking Aloud Pair Problem Solving (TAPPS) and Problem Posing Model (PPM) in teaching and learning process of reading in English Class at the eleventh-grade students of SMA IT Nur Hidayah, Sukoharjo. This research intends to find out (1) whether there is a significant difference of post-test result on reading comprehension between students taught using TAPPS and those taught by using PPM; and (2) whether TAPPS is more effective to teach reading than PPM. The method used in this research is quantitative through the experimental approach in order to analyze the data. The research was conducted in April 2017 until May 2017. The eleventh-grade students of SMA IT Nur Hidayah, Sukoharjo which consists of 148 students were used as the population of the research. The sample consists of 2 classes which for each consists of 24 students. The sample is XI IPA 1 as the experimental group and XI IPA 3 as the control group. The sampling technique is cluster random sampling. The data are collected by conducting a reading test and analyzed by using t-test formula. The result of the research shows that: (1) there is a significant difference in students' reading comprehension taught using TAPPS and those taught using PPM; and (2) TAPPS is more effective than PPM to teach reading for SMA School? students.

Keywords: *Thinking Aloud Pair Problem Solving; Problem Posing Model; Reading Comprehension*

INTRODUCTION

Reading activity is not only an activity that needs the ability to read aloud the text, but also this activity needs to try comprehending the meaning of the text. Paris and Stahl (2005) state that reading requires words recognition, comprehension, and fluency. So that, we read a text not only reading a text but also we need understanding the meaning of the text itself. Mostly, students, given an exercise of reading skills, only read a text without paying attention to every single sentence's meaning. They only focus on how to answer quickly. According to

Anderson (2005), reading combining process of gaining information from the text to their knowledge to create meaning in their mind. It means that the aim of reading is to get the meaning or message based on the text. Otherwise, while readers' getting information well; they have to have a good background of knowledge.

Reading is Reading is a mindful and mindless thinking process. A reader may implement many strategies to rebuild the meaning of author's assumption. The reader would compare the information of the text to his or her background knowledge and prior experience (Mikulecky, 2009).

Fluency in reading is not only related to reading speed but also how well readers understand the gist of a text well in a less time. To read fluently, readers need to practice more and more. To become fluent readers, readers need to use comprehension strategies. Comprehensions strategies are related to how well readers understand and solve the problems in reading a text. Aside from using comprehension strategies while reading a text, skilled-reader will note in their mind the main idea, supporting details, and the sequences of events of the text. For beginner readers, they may still need guidance on how to find mind idea, how to relate the sequences of events, or even how to understand the meaning of the text. So that, beginner readers need to use the strategies in comprehending a text.

In senior high schools, especially for XI grader in Indonesia's curriculum of KTSP 2006, the basic competence which should be achieved by students of abilities in reading comprehension is able to identify main ideas, explicit and implicit information, the meaning of words, and references. (BSNP: 2006, P. 123 – 124).

Thinking Aloud Pair Problem Solving (TAPPS) strategy is a strategy which can be applied by teachers in teaching problem-solving. Procedures that should be followed by a teacher, for example, a teacher distributes a text and asks students to analyze the problem. Students involve learning to talk aloud while thinking about a strategy for solving a problem and learning to listen and encourage. Barkley in Rahmi stated that thinking aloud gives a good effect for students to deepen their understanding.

In reading comprehension, a teacher as an educator might implement a good method in teaching learning process. In this research, the researcher tests: (1) is there any significant difference between the students taught by using TAPPS and those taught by using PPM; (2) is the implementation of Thinking Aloud Pair Problem Solving (TAPPS) more effective

than Problem Posing Model (PPM) in teaching reading comprehension to the second semester of XI grade SMA IT Nur Hidayah, Sukoharjo?

LITERATURE REVIEW

Concept of Reading

Reading needs interaction to printing and monitoring comprehension of building up meaning which means the brain does not work in reading, the pupils get information by comprehending the message and the teacher encourages the pupils to read.

Meanwhile, Godman states that reading is a psycholinguistic guessing game, which involves a cycle of sampling, predicting, testing and confirming. The establishment of reading skills mostly occurs in testing and confirming. Being an effective reader, the pupils should be capable to (1) scan; (2) skim; (3) read between the lines; (4) read intensively; and (5) deduce meaning from the context.

According to Leighton and Mark (2007), reading comprehension evaluates student's ability to read with understanding, insight, and discrimination. Type of question explores the students' capability to analyze a written text from any sights, including student's ability to identify both explicitly stated elements in the text and assumptions underlying statements or arguments in the text as well as the implications of those statements or arguments because the written text which the questions are based present a sustained discussion of a particular topic. There are six types of reading comprehension questions by Graduate Management Admission Test (GMAT). These types focus on these aspects:

(1) Main idea;

(2) explicit and implicit information;

(3) Ideas;

(4) Processes analogous to describing text;

(5) A tone of the text.

Based on the discussions above, it can be said that to be able to achieve the purpose of reading for comprehension, students have to be able to find out the main idea, find out explicit and implicit information, find out a reference, and identify the meaning of words.

Concept of Thinking Aloud Pair Problem Solving (TAPPS)

The instructional approach was used on this research Afflerbach and Johnston cited by McKeown and Gentilucci (2007), claim that think-aloud pair problem posing (TAPPS) can be used as a method of evaluation on the cognitive reading process, then as a metacognitive tool to review students'

comprehension. So That, the think-aloud is appropriate for this study because through this strategy the students can review their comprehension process.

Pressley et al. in McKeown and Gentilucci's (2007) work: "think-aloud pair problem posing is one of the "transactional strategies because on this strategies makes students involved in gaining and build up the meaning. Through the interactions that think aloud promotes, a better understanding of the texts may emerge in the classroom.

Another illustration about think aloud is provided by Tinzmann in Teacher Vision website (2009), he says that:

When students apply think aloud pair problem posing with teachers and with one another, they gradually internalize becomes their inner speech, the means by which they direct their own behaviors and problem-solving processes. Therefore, as students, in think-aloud, they generate how to learn, and they develop into reflective, metacognitive, independent learners, an invaluable step in helping students understand that learning requires effort and often is difficult.

Johnson and Chung (1999) state about the strengths and the weaknesses of Thinking aloud pair problem-solving. The strength: 1) every member in thinking aloud strategy could learn about the strategy of solving problem, so both listener and speaker they have thinking process, 2) Thinking aloud strategy requires the problem solver to think and explain so that, their thinking is more structural, 3) the dialogue on Thinking aloud strategy creates contextual thinking which needed to improve students' understanding, and 4) Thinking aloud strategy creates comprehending in reading.

Besides having the strengths, Thinking aloud strategy also has the weaknesses, they are: 1) thinking while explaining to the listener is not an easy way, the student would get difficulties on choosing dictions, moreover to those who rarely speak on, 2) thinking aloud strategy needs time more.

Concept of Problem Posing Model

Ngah, et. al (2015) states that problem posing has 3 definitions, they are: 1) problem posing is creating simple question with any changes to simplify the question to make more understandable for solving a problem, 2) Problem posing is creating items of question to create the alternative way for solving a problem, 3) problem posing is creating items of question based on the certain situation or condition.

Ngah, et. al (2015) explains the certain situation of problem posing. Problem posing

classified into 3 classifications; there is free, semi-structured, and structured problem posing. On free problem posing, the students are not given any specific information. The students are given freedom to create items of a question. The students could use phenomena in their daily life as a guide to creating the item of a question. While for a semi-structured situation, students are given open-situation or information, then the student asked to find any situation based on their own knowledge. For structured problem posing, students are given a certain problem. After that, the students have to create a new problem.

METHOD

The research is an experimental research using a quasi-experimental design. The experimental was chosen since the essence of the experimental design is a comparison (Griffee, 2012:72). The experimental group is they who taught by using TAPPS while the control group is they who taught by using PPM. Group of a sample would have tests to measure the effect that students get after the treatment. The results of the tests would be analyzed and compared using statistical computation.

This research design presents several characteristics; (1) there are experimental and control group; (2) the two groups are compared to measurements of observation on the dependent variable; (3) both groups will be measured twice, the first measurement serves as the pre-test and the second as the post-test; (4) measurement of the dependent variable for both groups are done at the same time with the same test; and (5) the experimental group is manipulated with a particular treatment. In this study, the population of the study includes all XI grade students of the SMA IT Nur Hidayah, Sukoharjo in the academic year of 2016/2017. There are 148 students from 6 classes. In one class, the average of students' amount is 24 students. The samples of this research are XI IPA 1 and XI IPA 3 Grade of SMA IT Nur Hidayah, Sukoharjo of the second semester in the academic year of 2016/2017. From the result of Pretest, the students' condition was normal and homogeneous with the mean score of the experimental group was 66.5 while a control group was 68.83.

The method to collect data for this research used a test. A test itself is a group of questions, tasks or exercises to measure individual or group's skill. The contents or the reading task include a factual question, determining a title and determining the main idea. The test used is in the form of multiple-choice type. The validity of the reading test

items was measured by using the following

$$r_{xy} = \frac{\bar{x}_i - \bar{x}_t}{S_t}\sqrt{\frac{p_i}{q_i}}$$

formula:

Where:

r_{xy} : Validity

S_t : Deviation Standard

p_i : The test proportion which can answer the correct items

q_i : 1- p

$\acute{x}_t$: The average of total score of all tests

$\acute{x}_i$: Average of Score test for the correct answer

The result of calculation of validity was consulted to be the r table of statistical computation. The test items are valid if r obtained is higher than r table or $r_o > r_t$ and if the result if r obtained less than r table, it is invalid.

The reliability of the reading test, the writer measures by using the following formula.

$$r_{kk} = \frac{k}{k-1}\left[1 - \frac{\sum pq}{s_t^2}\right]$$

Where:

r_{kk} : Reliability of instruments

k: number of test items

p: the proportion of test takers who pass the items

q: the proportion of test takers who fail the items

At the analyzing stage of analyzing data, the researcher applies inferential and descriptive statistics. Descriptive statistics is for calculating mean, median, mode, and standard deviation of the score for reading test. To test whether the data is a normal distribution data, the researcher tests the normality data. While for identifying whether the data is homogenous, the researcher tests homogeneity.

Normality test is conducted to find out whether the data score in each group is normally distributed or not. The writer used Liliefors' formula to test the normality.

While homogeneity test is conducted to find out whether the variances of scores in control and experimental groups are homogenous or not. The writer used Barlett's to test the homogeneity.

In analyzing the data, the writer uses t-test. A t-test is used to compare the means of two groups. The statistical hypothesis of this research is as follows:

H_0 (Null Hypothesis) : $\mu_A = \mu_B$

H_1 (Alternative Hypothesis) : $\mu_A > \mu_B$

Where:

μ_A is the mean score of the experimental group; μ_B is the mean score of the control group; H_0 is accepted if both the experimental group and the control group have the same mean score; H_1 is accepted if the experimental group has a higher score than the control group.

FINDINGS

The data which are analyzed in this research are the result post-test. After giving treatments to both groups, the researcher gave a test to the students. The pre-test and post-test scores of the experimental and control group students are compared using t-test formula to prove whether there is any significant difference between the post-test score of the two groups and to find which method is more effective to teach reading.

Post-test Score

After the experimental group got treatment for 8 meetings, the highest score of the post-test is 88 while the lowest score is 56. The mean is 73.833, the median is 71.5, the mode is 87.5, and the standard deviation is 11.00066. Meanwhile, for the control group, the highest score of the post-test is 88 while the lowest score is 56. The mean is 68.333, the median is 66.3, the mode is 64.5, and the standard deviation is 9.504. Followings are the table of the score and the histogram of post-test score both experimental group and control group.

Table 2. The distribution table of post-test experimental group and control group

Class Limits	Class Boundaries	Frequency	
		Exp. Group	Control Group
56 – 62	55.5 – 62.5	6	6
63 – 69	62.5 – 69.5	5	9
70 – 76	69.5 – 76.5	7	2
77 – 83	76.5 – 83.5	1	4
84 - 90	83.5 – 90.5	5	3
Total		**24**	**24**

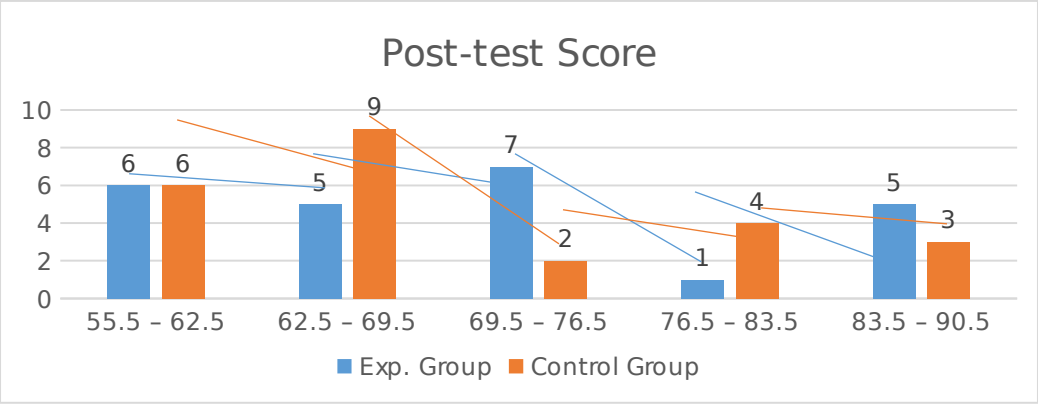

Figure 2. Histogram of the post-test score in Exp. Group and control group

A. Prerequisite Tests

B.

C. Before analyzing the data using inferential statistics, normality and homogeneity test must be passed. It needs to check whether the two classes are similar or not. As the requirement of the t-test, both of the data of pre-test and post-test are needed to be tested for normality and homogeneity.

D.

E. Normality Test

F. The normality test used in this research is Liliefors test at the level of significance of 0.05 ($\alpha = 0.05$)

G.

H. **Table 3**. Normality test

I. No	J. Data	K. Sample	L. (Lo)	M. (Lt)	N. α (5%)	O. Decision of Ho	P. Description
Q. 1	R. A 1	S. 24	T. 0.16	U. 0.1808	V. 0.05	W. Accepted	X. Normal
Y. 2	Z. A 2	AA. 24	AB. 0.176	AC. 0.1808	AD. 0.05	AE. Accepted	AF. Normal

AG.

AH.

AI. Based on the result of the calculation, it can be seen that all of the Lo values are lower than Lt so it can be concluded that Ho is accepted. It means the data distribution is normal.

AJ.

AK.

AL.

AP.

AM. Homogeneity Test

AN.

AO. Homogeneity test is done to know whether the data are homogeneous or not. If χ_o^2 is lower than χ_t^2 at the level of significance of 0.05, it can be concluded that the data are homogeneous.

AQ. **Table 4.** Homogeneity test

AR.

AS. N	AT. Te	AU. Group	AV. Sample	AW. D	AX. χ Value BE. χ_o^2	BF. χ_t^2	AY. Description
BH. 1	BI. Po	BJ. Experimental	BK. 24	BL. 2	BM. 1.404	BN. 2.	BO. Homogeneous
BR. 2		BT. Control	BU. 24	BV. 2	BW. 1.404	BX. 2.	BY. Homogeneous

BZ.

CA.

CB. Based on the result of calculation, it can be seen that both pretest and posttest data are homogeneous.

CC.

CD.

CE.

CF.

CG. Hypothesis Testing

CH. The hypotheses of this research are as follows: first, there is a significant difference in reading skill between the students taught using TAPPS and PPM. Second, the TAPPS is more effective than PPM to teach reading.

CI. The result of t computation shows that t_o ($_{observation}$) is 8.628 while the t_t (t_{table}) for the degree of freedom 46 and the level of significance α=0.05 is 2.0738 so, t_o is higher than t_t(t_{table}). It means that H_o is rejected. Then it can be concluded that there is a significant difference in reading comprehension between students taught using TAPPS and PPM.

CJ. The second hypothesis of this research is that TAPPS is more effective than PPM for teaching reading. In order to test the second hypothesis, the writer needs to compare the post-test mean of the two groups. The mean score of the experimental group students get treatment is 71.88, while the mean score of the control group is 66.46. The mean score of the experimental group is higher than the mean score of the control group. It can be concluded that TAPPS is more effective than PPM.

CK.

CL. DISCUSSION

CM. The result of the first hypothesis, it shows that TAPPS is more effective than PPM in teaching reading. TAPPS emphasizes the impact of social interaction on pairs of learners on individual learning because it is a cooperative learning. TAPPS is a combination of think aloud and teach back techniques, helps students to think carefully, and systematically. On the contrary, for PPM model, it concerns more about how we solve a problem by making a problem. PPM model, the problem itself is made by students. For each student, the capability and the basic knowledge are different. Sometimes, a student could make an easy problem and difficult problem. Silver cited by Sutiarso (2000) states that problem posing has 3 definitions, they are: 1) problem posing is creating simple question with any changes to simplify the question to make more understandable for solving a problem, 2) Problem posing is creating items of question to create the alternative way for solving a problem, 3) problem posing is creating items of question based on a certain situation or condition.

CN. When students use think-aloud pair problem posing to others, they gradually internalize this dialogue, it becomes their inner speech, the means by which they direct their own behaviors and problem-solving processes. Therefore, as students think aloud, they learn how to learn, and they develop into reflective, metacognitive, independent learners, an invaluable step in helping students understand more. In the other side, in the

PPM class, the students make items after they read the passage. The items which student made are shared with the other group and the other group is trying to answer the items. So, for the problem-solving processes, TAPPS is better than PPM, because the students learn how they think and develop to understand the text.

CO. In summary, the result of the research shows that there is a significant difference in reading comprehension between TAPPS and PPM. The research shows that TAPPS is more effective than PPM in teaching reading.

CP.

CQ. CONCLUSION

CR. Based on the result of the research, the findings are as follows:

1. There is a significant difference in reading comprehension between the students taught using TAPPS and those taught using PPM of the 11th graders of SMA IT Nur Hidayah in the academic year of 2016/2017.
2. TAPPS is more effective than PPM to teach reading for the 11th graders of SMA IT Nur Hidayah in the academic year of 2016/2017.

CS. Based on the research findings, it can be assumed generally that TAPPS method is an effective method to teach reading for the second semester of the eleventh graders of SMA IT Nur Hidayah Sukoharjo, in the academic year of 2016/2017.

CT.

CU.

CV.

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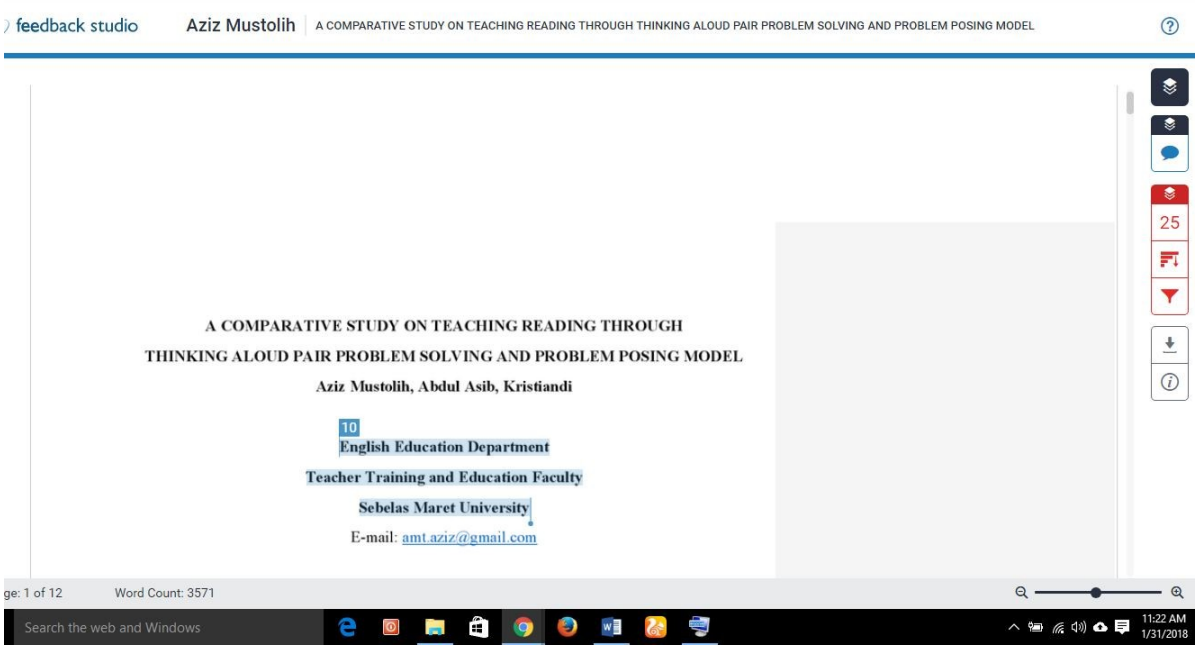
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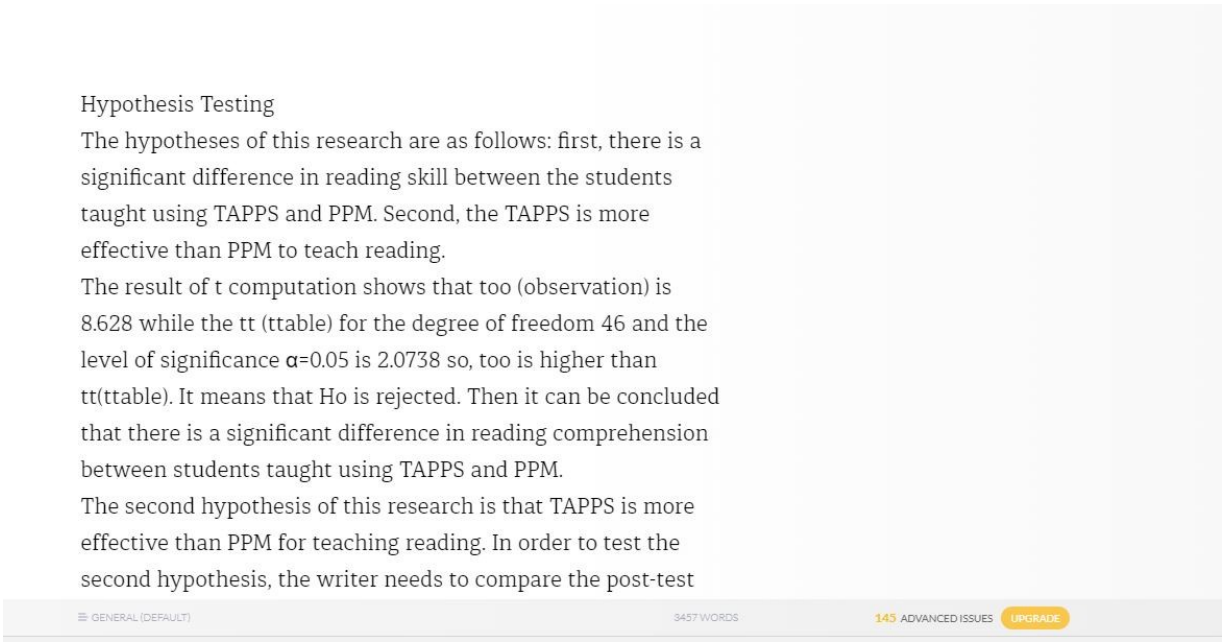

Hypothesis Testing

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DX.