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INVESTIGATING THE IMPACT OF PROBLEM BASED LEARNING ON THE TENTH GRADE STUDENTS' SPEAKING SKILL

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Abstract

Problem-based learning (PBL) is a powerful pedagogical approach which can be effective in ELT. This research aims at finding out the impact of PBL on speaking skill. The population of this research is the tenth-grade students of SMAN 3 Kabupaten Tangerang with the total 500 students. Furthermore, the research was conducted only on 84 students of 10 IPS 5 and 10 IPS 2 as the sample. Quasi-Experimental was employed to answer the research question. Then the research data is collected through pre-test and post-test. The data of this research was statistically calculated by using SPSS 22. The statistical analysis results indicated that the implementation of PBL had a significant impact on the experimental class. However, the statistical test results for the control class did not show any significant difference between the pre-test and post-test scores.

Keywords: quasi experimental; problem-based learning; PBL; speaking skill

1. Introduction

In Indonesia, most people learn English at formal education from kindergarten to university level. Besides, they also learn English from the courses. As one of the English skills, speaking is a very important skill in communication. Without having a good speaking skill, people cannot make conversation with other people. Good communication has many benefits for all people. In addition, it can help students to achieve a higher score in English learning of speaking skill. Besides, Indonesia establishes English as prominent foreign language taught at school and one of subjects tested in national exam.

Speaking has an important role in daily life. Everyday people communicate using words and expressions that may have various meaning. In order to fluently communicate, people must have shared understanding of the meaning of the words they use. The main objective of speaking English mastery is students can speak well, fluently, and do interaction with other people in different countries and make students easy to access knowledge and information from many countries in the world. According to Martinez (2015:61),

"Speaking is the relationship of participation of the speaker with the listener, both constituting of speech act." Speaking is a way to interact, share idea, and express feeling with the other people. Besides, it can increase students in vocabulary, pronunciation, grammar, etc.

However, based on the writer's observation and interview with English teacher in SMAN 3 Kabupaten Tangerang, there are many students still lack of speaking skill. In school, English is one of subjects that have many difficulties for students, the score of minimum criteria on speaking in that school is 75, while the students get average under score of minimum criteria. The students have some problems in achieving the target in score of minimum criteria for speaking skill. This problem happens because of some factors. The students less practice to speak English in the class because the students often use mother language with other people. They do not know how pronounce the words in English and they are afraid to try speak English. In addition, the students say "I can't speak English." The students' vocabulary mastery is low because the students find it difficult to memorize English vocabulary. When the students stay in front of the class to speak English, they forget some vocabularies, and they feel nervous. Besides, English teacher teaches the students traditionally which makes teacher more active than students. The method is not effective in teaching speaking because it makes learning process less communicative. It can be concluded that the students of SMAN 3 Kabupaten Tangerang have low in speaking skill.

According to Hung (2011:31), problem-based learning is instructional method aimed at preparing students to solve problems in their learning. The students can be active and get an idea. The students can find a solution about a problem in learning English. The teacher is as facilitator support the learning and collaboration processes. PBL is a method to engage the students to communicate, share each other in order to solve their learning problem. Automatically, their speaking skill will improve their communication skill in English.

Furthermore, the writer needs to help the students to learn better especially improve the students in speaking skill. For this reason, many methods can be applied including problem-based learning (PBL) because it encourages the students to be actively participating in teaching learning process. According to Hmelo-silver, Barrows, Hmelo-silver, & Barrows (2006:24), PBL is a method in learning and give stimulus for students. This method also gives the students an opportunity to practice communicating with many people.

The writer considers that PBL can improve students in speaking skill based on the research conducted by Ansarian & Shafiei (2016) which investigated the impact of PBL on Iranian EFL learners' speaking proficiency. Teacher and learners could employ PBL in order to scaffold their deep understanding of the subject. As a

result, a comparison of the pretest and posttest in experimental group proved that problem-based learning had significant positive effect on speaking proficiency.

This article describes whether there is an impact of problem-based learning on speaking skill at tenth grade students of SMAN 3 Kabupaten Tangerang.

2. Method

This research employs quasi experimental research with pre-test and post-test design. The total number of population is 500 students of the tenth grade divided in 12 classes. Then purposively, the sample was selected. 84 students were selected as sample, i.e. the students of X IPS 5 as the experiment class and X IPS 2 as the control class.

The test was oral test by using instrument validated using content validity by experts; i.e. an English lecturer of Universitas Islam Syekh-Yusuf and the English teacher of SMAN 3 Kabupaten Tangerang.

Furthermore, after conducting the pre-test and post-test, the score was analyzed by using Kolmogorov-Smirnov to find the normality of the data. It was analyzed by using SPSS version 22 by measuring significance standard.

Then test of homogeneity was analyzed to know whether the data is taken from the homogeneous sample or not. To test the homogeneity of the data, One-Way ANOVA was used. This test is used to find out whether the data is homogeneous or not. The writer used SPSS version 22 application.

After testing the normality and homogeneity, it was found that the data is not normally distributed, so the hypothesis test should be done through non-parametric statistics, i.e. Mann Whitney test in order to find out the effectiveness of problem-based learning on speaking skill at the tenth-grade students. The purpose of this test was to compare the pre-test and post-test score in each class (first experimental class using problem-based learning method and control class using conventional method).

3. Result and Discussion

The students' speaking skill scores in the experimental class were obtained through an oral test. The data shows that the mean pre-test score for the experimental class was 34.88, with the minimum score 25, the maximum score 88, and the standard deviation 16.77. After the treatment, the mean post-test score increased to 51.29, with the minimum score 31, the maximum score 94, and the standard deviation 14.372. The summary can be clearly seen in table 29.

Table 29 Descriptive Statistics of Experiment Class

	N	Min	Max	Mean	Std. Deviation
Pre-test	30	25	88	34.88	16.771
Post-test	30	31	94	51.29	14.372

Meanwhile, the pre-test score of students' speaking skill in control class was 31.43, with the minimum score 25, the maximum score 75 and the standard deviation 12.935. After treatment, the

mean of control class was 49.83, with the minimum score was 31, the maximum score was 88 and standard deviation was 49.83. The data can be seen in table 30.

Table 30 Descriptive Statistics of Control Class

	N	Min	Max	Mean	Std. Deviation
Pre-test	30	25	75	31.43	12.935
Post-test	30	31	88	49.83	49.83

Furthermore, the data was analyzed to test the hypothesis which was initially done by testing the analysis assumption.

a. The Test of the Analysis Assumptions

1) Test of Normality

To know the data normality, the data was processed in the calculation of normality test using One-Sample Kolmogorov-Smirnov in SPSS version 22. The complete result of testing can be seen in table 31.

Table 31 shows that the significant value of experimental class is 0.000, while the significant value of control class is 0.012. Based on testing criteria, if the significant score is higher than 0.05, it means that Ha is rejected, and if the significant score less than 0.05, it means that H_a is accepted. Data of experimental class have significant score less than 0.05 (0.000 < 0.05) and data of control class have significant score less than 0.05 (0.012 < 0.05) which means that H_a is accepted. So, it can be concluded that the data of experimental and control classes is not normally distributed.

Table 31 Test of Data Normality
One-Sample Kolmogorov-Smirnov Test

		Post-test	
		Exp. Class	Cont. Class
N		42	42
Normal Parameters[a,b]	Mean	16.40	18.40
	Std. Deviation	10.416	7.960
Most Extreme Differences	Absolute	.211	.156
	Positive	.211	.156
	Negative	-.159	-.153
Kolmogorov-Smirnov Z		.211	.156
Asymp. Sig. (2-tailed)		.000[c]	.012[c]

2) Test of Homogeneity

The data homogeneity was analyzed by using One-Way ANOVA in SPSS version 22. The complete result can be seen in table 32.

Table 32 Test of Homogeneity of Variances

Test of Homogeneity of Variances			
Post test			
Levene Statistic	df1	df2	Sig.
18.851	1	82	.229

The table shows that the significant score is 0.229. Based on the testing criteria if the significant score is less than 0.05, it means the data is not same variant group, and if significant score is more than 0.05, it means the data is the same variant group. The significant score is 0.229, more than 0.05, it means the result of the test shows that the population variant is homogenous.

Since the data is homogenous, but not normally distributed, the test of hypothesis used non-parametric by Mann Whitney U test.

b. Testing of Research Hypothesis

Since the data of both groups is not normally distributed, the hypothesis was tested by using non-parametric statistics by Mann Whitney U test to find out the effectiveness of problem-based learning on speaking skill at the tenth-grade students. The purpose of this test was to compare the pre-test and post-test score in each class (experimental class using problem-based learning and control class using conventional method), and to investigate which method is more effective.

1) Experimental Class

In the statistical analysis of the experimental group's pre-test and post-test scores, the researcher utilized the non-parametric Mann-Whitney U test to determine if there was a statistically significant difference between the two sets of scores. The Mann-Whitney U test results indicated a p-value of 0.012, which is less than the standard significance level of 0.05. Therefore, the null hypothesis (H_0) was rejected, and the alternative hypothesis (H_a) was accepted. This means that there is a statistically significant difference between the pre-test and post-test scores in the experimental group, which employed problem-based learning (PBL) to enhance the speaking skills of tenth-grade students at SMAN 3 Kabupaten Tangerang. Consequently, the PBL method applied in the experimental class proved effective in improving the speaking skills of these students. Table 33 shows the experimental class hypothesis test summary from SPSS 22.

Table 33 One-Sample Test of Experimental Class

Null Hypothesis	Test	Sig.	Decision
There is no impact of PBL on students' speaking skill.	One-Sample Kolmogorov-Smirnov Test	.012[1]	Reject the null hypothesis

Asymptotic significances are displayed. The significance level is .05.
[1]Lilliefors Corrected
Source: Statistical result SPSS 22

2) Control Class

In the statistical analysis of the control group's pre-test and post-test scores, the researcher employed the non-parametric Mann-Whitney U test to determine if there was a statistically significant difference between the two sets of scores. The Mann-Whitney U test results indicated a p-value of 0.570. This value is greater than the standard significance level of 0.05. Therefore, the null hypothesis (H_0) is retained, and the alternative hypothesis (H_a) is rejected. This means that there is no statistically significant difference between the pre-test and post-test scores in the control group. Consequently, it cannot be concluded that there was significant improvement in the control group's speaking skills. Table 34 shows the control class hypothesis test summary from SPSS 22.

Table 34 One-Sample Test of Control Class

Null Hypothesis	Test	Sig.	Decision
There is no impact of conventional method on students' speaking skill	One-Sample Kolmogorov-Smirnov Test	.570 [1]	Retain the null hypothesis

Asymptotic significances are displayed. The significance level is .05.
[1]Lilliefors Corrected
Source: Statistical result SPSS 22

3) Different Values between Experimental and Control Class

Table 35 shows that the hypothesis test was done by using independent samples Mann-Whitney U Test in a non-parametric statistical method. This was used because the data is not normally distributed. The basic principle of the Mann-Whitney U test is: if the Asymp. Sig. is smaller than 0.05, H_a is accepted and H_0 is rejected. Otherwise, if the Asymp. Sig. is higher than 0.05, H_a is rejected and H_0 is accepted. The result of the table 35 shows that Asymp. Sig. 0.127, which is smaller than 0.05. Therefore, it can be concluded that H_a is rejected and H_0 is retained. It can be concluded that there is no significant difference between the experimental and control class.

Although there is no significant difference between the experimental and control class, the statistical analysis shows that PBL helps students improve their speaking skill. Based on table 33, there is impact of PBL on speaking skill, while the impact of conventional method is not significant. It is in line with the research conducted by Sutrisna and Artini (2020) which reasonably argued that PBL helped students demonstrate better speaking performance. Montafej, Lotfi, & Chalak (2021) also proved that PBL is effective to develop EFL learners' speaking skill and their self-confidence. In addition, Oktadela & Elida (2022) said that PBL helped students learn English.

Table 35 Independent Samples Mann-Whitney U Test of Hypothesis

Null Hypothesis	Test	Sig.	Decision
There is no difference between experimental and control group students' speaking skill.	Independent Sample Mann-Whitney U Test	.127	Retain the null hypothesis

Asymptotic significances are displayed. The significance level is .05.
Source: Statistical result SPSS 22

4. Conclusion

This research aimed to examine the effectiveness of Problem-Based Learning (PBL) on improving the speaking skills of tenth-grade students. The statistical analysis results indicated that the implementation of PBL had a significant impact on the experimental class, characterized by a statistically significant improvement in students' speaking skills. However, the statistical test results for the control class did not show any significant difference between the pre-test and post-test scores. This indicates that PBL proved effective in enhancing students' speaking skills in the experimental class, while the teaching methods applied in the control

class did not yield a significant impact during this research period. In other words, PBL demonstrated superiority in improving speaking skills compared to the conventional teaching methods applied in the control class. This research provides empirical evidence that PBL can be an effective alternative in teaching speaking skills.

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