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The Effect of Project-Based Learning Method in Improving Students' English Speaking Skills

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Abstract

This research aims to determine the effect of the Project Based Learning (PjBL) method on improving students' English speaking skills at SMPN 16 Bengkulu City. This study employed a quantitative approach using a quasi-experimental design with a non-equivalent control group. The sample consisted of two seventh-grade classes: class VII G as the experimental group and class VII B as the control group, with a total of 62 students. The instrument used was a speaking test assessing three components: fluency, accuracy, and comprehensibility. The research procedures included a pre-test, four treatment sessions for the experimental group, and a post-test. The results indicated a significant improvement in speaking skills among students taught using the PjBL method. The experimental group's mean score increased from 35.8 (pre-test) to 66.9 (post-test), while the control group increased from 34.3 to 55.7. Normality and homogeneity tests showed that the data were normally distributed and homogeneous. The independent sample t-test result revealed a significance value lower than 0.05, indicating that PjBL had a statistically significant effect on students' speaking achievement. In conclusion, the Project Based Learning method is effective in enhancing students' English speaking skills, particularly in fluency, accuracy, and comprehensibility. It is recommended that English teachers apply PjBL as an interactive, student-centered learning strategy

Keywords: *Project-Based Learning, Speaking Skill, English Education, Quantitative Research.*

INTRODUCTION

Speaking skills enable one to communicate effectively in everyday situations, as speaking is an essential skill for second language learners to communicate with native and non-native speakers and participate in real- life situations (Jabber & Mahmood, 2020; Li & Chan, 2024; Wan & Moorhouse, 2024). Speaking skills are the most difficult English language skills to master. According to Paspue et al (2021) English speaking classes in many countries have many problems that reduce opportunities to improve speaking accuracy and familiarity such as having insufficient time, crowded classroom environments, missed opportunities to practice outside of lessons and waste of interactive media frameworks in class, and others. Project-based learning methods offer a suitable way for contemporary curriculum as students get hands-on experience in using English in real-world situations. Project-based learning is an effective method used to improve learners' English learning and skills, especially in the development of speaking skills (Sirisrimangkorn, L. 2021).

Speaking is the most important skill in the learning process (Ying, Yong Hua, et al 2021). Speaking is a language skill that must be mastered by students in learning a language because the purpose of language learning is communication (Guebba, Boutania, 2021). The importance of having English speaking skills as a communication tool and thinking tool is also seen in English subjects. In general, many students still find it difficult to convey ideas,

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thoughts, questions and so on using good and correct English In addition, speaking, asking and giving an opinion is one of the phrases contained in the lexis and grammar. So, teacher needs to give a variety of phrases to the students to make their English-speaking skill more fluent.

There are many factors that cause students to have low English speaking skills, such as what happens at SMPN 16 Bengkulu City, some of the causes are the first because the teacher does not use the right method when teaching English speaking. Conventional teaching methods that focus on memorization and are not student-centered cannot actively involve students in the learning process. Secondly, the methods used by teachers are not varied, many teachers still rely on the lecture method, thus giving little room for active participation and speaking practice in the classroom. Another problem is students' lack of motivation to practice speaking in English. This lack of enthusiasm can stem from a variety of factors, such as fear of making mistakes, and low self-esteem.

One of alternative ways to deal with students' problem is providing project based learning to improve English speaking skill. Project-Based Learning (PjBL) is an important learning process, especially in design-related disciplines such as creative media design. Here, students learn by doing, building on their own knowledge and experiences. Through PjBL, students are fully engaged in their learning, applying the skills and knowledge they acquire in class on projects to solve authentic problems. PjBL is a learning approach that focuses on solving real-world problem-based projects. These projects provide students with opportunities to speak actively in role-play activities, group discussions, and presentations, which directly affect their speaking skills (Belharb & Hayat, 2020). PjBL is expected to first improve students' speaking fluency by giving them more time to practice speaking spontaneously during various project activities (Choochana, Anutsara, and Phinta Kulsirisawad, 2021).

The original situation of PjBL allows students to practice speaking spontaneously without anxiety, which enables them to develop their speaking ability naturally and fluently (Ceneciro et al, 2023). In addition, the continuous practice of the project helps students get used to conveying their ideas more confidently. Secondly, it is possible that PjBL can improve students' pronunciation accuracy. Students are often required to convey their ideas orally during the project process. They have the opportunity to practice using proper grammar and pronunciation through this process. Students can correct their mistakes directly with the help of the teacher or group mates. In the end, they will be better at speaking (Spring, Ryan 2020). Students learn to convey their messages in a way that is easy to understand and clear through PjBL. Activities such as group discussions, collaboration, and presentations help students increase their focus on conveying concepts with appropriate intonation and logical sentence structure. PjBL allows students to improve their understanding of speech through feedback from listeners, be they teachers or friends, even though there may be small errors in pronunciation or grammar (Cherry, Caroline, 2021). Additionally, projects that are relevant to real- world situations help students learn to change their speaking style so that listeners can understand the message being conveyed.

Project-based learning (PjBL) methods have many benefits in learning, especially in preparing students to face the challenges of the 21st century. One of the main benefits of PjBL is that it increases student engagement in learning by providing them with the opportunity to work on projects that are meaningful and relevant to the real world (Omelianenko, et al, 2024). With PjBL, students not only acquire theoretical knowledge, but they also acquire skills that are essential for daily life. Engaging activities and adequate encouragement, students may struggle to overcome these speaking challenges and improve their skills. Thus, many students experience difficulties in expressing their thoughts orally

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due to lack of practice, low self-confidence, and lack of exposure to authentic communication activities.

In a previous study, Sirisrimangkorn, L. 2021 found that project- based learning can improve English speaking skills by 0.01 compared to before the application of project-based learning. Urgilez Tello, M. G. 2022 found project based learning has resulted in considerable improvement in students' oral production. Hsiu-Lien T 2024, found that improving the speaking ability of English as a Foreign Language (EFL) learners by using project-based learning (PjBL) with local materials is very effective. Combining active project-based tasks with culturally relevant content enhances a more dynamic learning environment and supports the development of language skills and soft skills such as cooperation and thinking. Research Question: Is there an effect of project-based learning methods in improving English speaking skills at SMPN 16 Bengkulu City?

METHOD

1. Research Design

This study used a quantitative research, it was a numerical data-based approach to testing theories or hypotheses through statistical analysis (Creswell J.W and Gueterman T.C 2024). This research is objective and systematic, in which researchers attempt to control research variables and use validated measurement tools to collect data that can be analyzed quantitatively. There are similar opinions among other experts who state that quantitative research is a type of research in which data is collected and coded in numerical form, and its objectives include description, statistical inference, causal explanation, and prediction, using methods such as social surveys, experiments, or analysis of official data or "big data"(Williams, M. et al 2022). This study using a quasi-experimental design, it is a quantitative research approach that mimics true experiments but without random assignment (randomization). Researcher can use pre-formed groups and still conduct interventions or pre-test/post-test measurements (Creswell J.W and Gueterman T.C 2024). The design used is a non-equivalent control group design, where two groups are selected through purposive sampling. This is used here to select subjects based on specific considerations, such as selecting groups with certain characteristics relevant to the quasi- experiment's objectives. The two groups, called the experimental group and the control group, will be given measurements before (pre-test) and after (post-test) the treatment.

Before the treatment, both groups underwent pre-test to measure the initial speaking skill. After that, the experimental group received the project- based learning method for for meetings, while the control group followed the usual learning taught by the teacher. After the period, both groups underwent a post-test to assess changes in speaking skills.

Table 1. Non equivalent control group design.

Class	Pretest	Treatment	Posttest
Experiment	0_1	X	0_2
Control	0_3	O	0_4

Note:
X: Project Based Learning Method
O: Not Project Based Learning Method
0_1 : Experimental group pretest result before given treatment 0_2: Experimental group pretest result after given treatment

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0_3 : Experimental group post test result before given treatment 0_4: Experimental group post test result after given treatment

2. Population and Sample

This research was conducted at SMPN 16 Bengkulu City. The selection of this location is based on the initial finding that students in this school still have low English language skills. This research was conducted on grade 7 students in 4 meetings, in the 2025/2026 school year, consisting of 3 stages, namely pre test (1 meeting), treatment (4 meetings), and post test (1 meeting). By placing the research in this school, researcher can directly see and measure changes in students' speaking skill before and after the application of Project-Based Learning (PjBL). The population in this study is all grade VII students at SMPN 16 Bengkulu city in the 2025/2025 school year. Class VII has local A-G.

Table 2. Population sample

	Classes	Population
1.	VII A	32
2.	VII B	31
3.	VII C	30
4.	VII D	30
5.	VII E	34
6.	VII F	33
7.	VII G	31
	Total	221

Source: SMPN 16 Bengkulu City, 2025

The sample was determined using purposive sampling technique, purposive sampling is a sample selection technique in which the researcher intentionally selects individuals or groups that are considered the most informative or relevant to the phenomenon being studied. With two classes that have similar characteristics and similar speaking skills select as the experimental and control groups. The number of students in each class is 31 students, the total sample is 62 students.

3. Research Instrument

The main instrument in this study was a speaking skills test, which aimed to measure students' speaking abilities before and after implementing the project-based learning method. In this case, the researcher collected data by providing a script in the form of a short dialogue about asking and giving directions. Each dialogue had gaps that the students had to fill in. The researcher gave the students time to read the script and fill in the gaps. Then, students were asked to come to the front and have a dialogue in pairs using the script they had learned. The researcher made a video while the students were having the dialogue. Students had the dialogue in a loud voice so that the researcher and classmates could hear clearly. Then, the results of the dialogue were assessed orally according to JB Heaton's criteria, namely assessing accuracy, fluency, and comprehensibility. Accuracy refers to the correct use of language elements such as grammar, vocabulary, and pronunciation so that speech is linguistically correct. Fluency describes a person's ease of speaking, which is the ability to convey ideas smoothly without too many pauses, hesitations, or distracting interruptions. Meanwhile, comprehensibility relates to the extent to which listeners can understand the speaker's meaning, whether the message is conveyed clearly and easily

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understood without requiring much clarification. These three aspects are used together to provide a complete picture of the quality of a person's speaking skills.

4. Data Analysis Technique

Before conducting the hypothesis test to determine the effect of the Project-Based Learning (PjBL) method on students' English speaking skills, the researcher conducted several preliminary statistical analyses to validate the accuracy and reliability of the data collected.

FINDINGS AND DISCUSSION

1. The Description of Data

The data in this study were obtained through research activities conducted by the researcher from October 6 to October 28, 2025. The research was conducted in two classes, namely class VII.G and VII.B at SMPN 16 Bengkulu City. The total number of research participants was 62 students, consisting of 31 students from class VII.G and 31 students from class VII.B. The purpose of this study was to present data on the effect of project-based learning methods in improving students' speaking skills. The sampling technique used was purposive sampling, which is the selection of samples based on specific objectives. In this case, class VII.G was designated as the experimental class that applied the project-based learning method, while class VII.B was designated as the control class that did not apply this method.

The first step taken by the researcher was to submit a letter of permission to the Principal of SMPN 16 Bengkulu City on August 25, 2025. This letter of permission was submitted so that the researchers could carry out research activities in the school environment. After obtaining permission, the researcher conducted the research according to the procedures that had been designed beforehand, both in the experimental class and the control class.

The research took place from October 6 to October 28, 2025, and involved four meetings with the experimental group that received the project-based learning method. The first meeting was held on October 13, 2025, with material introducing the vocabulary for asking and giving directions. The second meeting on October 16, 2025, involved students practicing expressions according to the material, while the third meeting on October 20, 2025, involved students having dialogues in pairs in front of the class, and the fourth meeting on October 23, 2025, involved students making maps of giving directions and explaining them in the form of videos.

Before the treatment was given, the experimental group students underwent a pre-test on October 9, 2025, to determine their initial skills in speaking English. During the learning activities, students received materials from English books commonly used by teachers in class, school maps, and other supporting media. Learning activities in the classroom included discussions, question and answer sessions, vocabulary practice, pair dialogues, and the creation of maps giving directions and explaining them in videos, thereby encouraging active student participation and improving their speaking skills. After all the sessions were completed, students took a final test (post-test) on October 27, 2025, to measure the extent of improvement in their English speaking skills.

a. Experimental Class

Based on the data collected at SMPN 16 Bengkulu City, the instrument was tested on students in grades VII.G and VII.B through preliminary and final tests. The pre-test was administered before the treatment to determine the students' speaking skills, while the post-test was administered after the treatment to assess the improvement in their speaking skills.

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Class VII.G was designated as the experimental class, consisting of 31 students (18 boys and 13 girls). The pre-test and post-test scores were obtained based on the number of correct answers to questions designed according to English speaking skill indicators and the results of videos of students in pairs asking and giving directions. The scores obtained were then used to analyze the effect of the treatment, namely the application of the project-based learning method in the experimental class. The following are the pre-test and post-test scores of the experimental class at SMPN 16 Bengkulu City:

Table 3. Pre-test and Post-test Score Experimental Class

No	Name	Pre test	Post test
1.	ANA	33	66
2.	AKA	53	86
3.	AGV	40	53
4.	AH	46	53
5.	AS	20	46
6.	AA	46	73
7.	DI	53	86
8.	D	33	73
9.	DS	40	66
10.	EO	20	53
11.	FRP	33	53
12.	FRM	53	80
13.	KE	33	53
14.	KA	26	53
15.	KAA	46	66
16.	LFS	53	73
17.	MAF	26	40
18.	MAS	26	60
19.	NA	13	46
20.	NF	53	66
21.	NR	33	53
22.	PN	20	46
23.	RTA	53	60
24.	RA	33	66
25.	RDU	26	33
26.	SG	13	20
27.	SA	26	46
28.	SN	40	73
29.	SM	33	40
30.	SN	20	33
31.	ZA	40	73
	Total	1083	1788
	Mean	34,94	57,68
	Min	13	20
	Max	53	86

Based on the data in the table above, it is known that the average pre-test score for the experimental class was 34,94, while the average post-test score increased to 57,68. The

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lowest score on the pre-test was 13, and the highest score was 53. Meanwhile, on the post-test, the lowest score was 20 and the highest score increased to 86. This shows an increase in learning outcomes after treatment was given in the learning process.

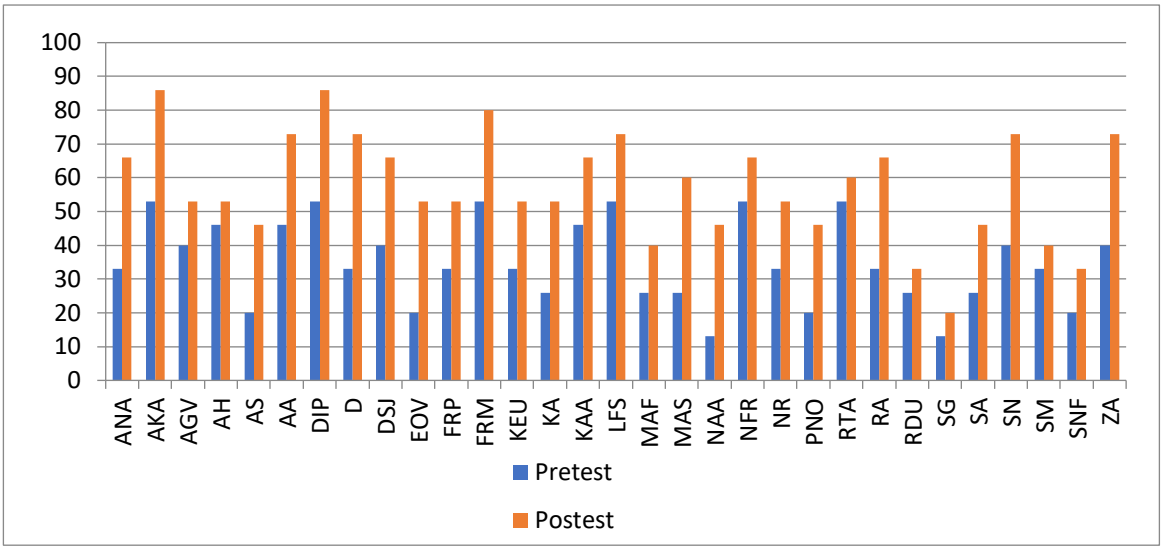

Figure 1. Bar chart of pre-test and post-test scores for the experimental

Based on the comparison graph between the pre-test and post-test scores of students in the VII.G experimental class, it appears that the majority of students experienced an increase in scores after participating in the learning process. The red graph representing the post-test scores is generally higher than the blue graph depicting the pre-test scores. This indicates that the learning activities implemented were able to help students understand the material better. Several students, such as AKA, DIP, FRM, LFS, SN, and ZA, showed a significant improvement, indicating that the learning methods used had a positive effect on their learning outcomes. Overall, the graph shows that the learning process implemented had a positive impact on improving students' speaking skills.

b. Control Class

As part of the research aimed at observing the effects of project-based learning on improving students' speaking skills, the researcher also involved a control class for comparison. The control class is important to determine the extent to which improvements in students' speaking skills can be attributed to a particular learning method. Class VII.B served as the control class, consisting of 31 students, with 18 male students and 13 female students. In this class, learning was conducted using conventional methods commonly used by teachers without the application of project-based learning methods. The pre-test and post-test scores were calculated based on the number of correct answers from the exercises prepared with reference to the indicators and English speaking skills. This data was used as a reference in assessing learning outcomes using conventional methods and for comparison with the results of the experimental class. The following are the pre-test and post-test results of the control class at SMPN 16 Bengkulu City. The following are the pre-test and post-test scores of the control class:

Table 4. Pre-test and Post-test Score Control Class

No	Nama	Pre test	Post test
1.	ASF	33	40
2.	AAH	20	53

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3.	AAP	13	33
4.	AKP	40	40
5.	AF	13	33
6.	AE	40	53
7.	AT	33	66
8.	AAA	13	46
9.	EF	26	33
10.	FR	53	66
11.	GA	33	73
12.	HF	40	53
13.	HZ	26	33
14.	IL	26	26
15.	MS	40	53
16.	MJ	13	33
17.	MGS	33	46
18.	MPK	20	46
19.	MR	26	60
20.	NP	33	66
21.	PF	53	53
22.	PA	20	53
23.	PR	53	60
24.	RA	33	46
25.	RJ	13	33
26.	RH	26	53
27.	SH	40	46
28.	SR	20	26
29.	TAS	13	20
30.	VF	53	60
31.	ZL	33	40
	Total	931	1442
	Mean	30,04	46,52
	Min	13	26
	Max	53	73

Based on the table above, it is known that the average pretest score in the control class was 30,04, and increased to 46,52 in the posttest. The lowest score on the pretest was 13, and the highest score was 53. Meanwhile, in the post-test, the lowest score increased slightly to 26, and the highest score increased to 73. When compared to the experimental class, both classes did experience an increase in average scores from the pre-test to the post-test. However, the increase in the experimental class was much higher than in the control class. This shows that the learning method used in the experimental class was more effective in improving students' English speaking skills.

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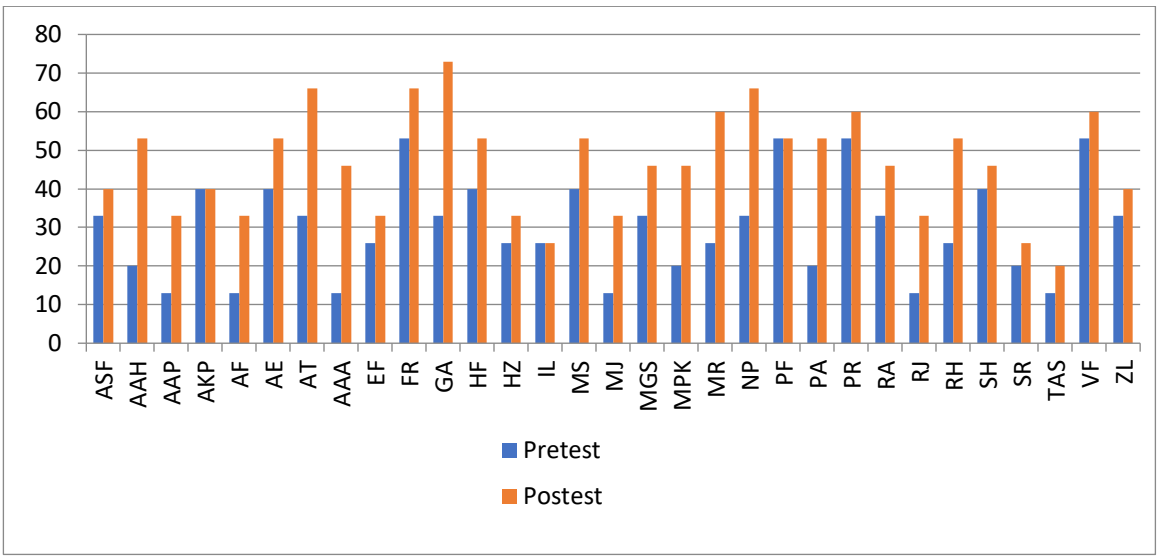

Figure 2. Bar chart of pre-test and post-test scores for the control class

This chart displays data from the control group, namely class VII.B. The blue bars represent pre-test scores, while the red bars show post-test scores. The chart shows that most students experienced an increase in their scores on the post-test compared to the pre-test. In general, the post-test scores were higher than the pre-test scores, although the increase was not as significant as in the other groups. Some students even showed almost the same scores on both tests.

2. The Analysisi of the Data

a. Normality Test

In this study, the researcher wanted to determine whether the data obtained was normally distributed or not. Therefore, two hypotheses were proposed as the basis for testing, namely H_0, which states that the data is normally distributed, and H_a, which states that the data is not normally distributed. The normality test using IBM SPSS Statistics 25, with the Lilliefors and Kolmogorov Smirnov test methods. The Lilliefors test was used to see whether the data was normally distributed, especially if the sample size is above 50 people. The normality test was conducted for the pretest and posttest data in the experimental and control classes. The criteria used in this test were as follows: if the significance value (sig.) was greater than 0.05, the data was considered to be normally distributed and H1 was accepted. Conversely, if the significance value is less than 0.05, the data is considered to be non-normally distributed and H_0 is accepted. With the help of SPSS, the normality test results for the pretest and posttest data were calculated using the Kolmogorov Smirnov formula, which is suitable for small sample sizes. From the results of this test, researchers can determine the next analysis steps based on the existing data distribution.

Table 5. Test of Normality Experimental Class (VII.G)

Tests of Normality					
	Kolmogorov-Smirnov[a]			Shapiro-Wilk	
	Statistic	df	Sig.	Statistic	df	Sig.

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Pre-Test Experiment Class	.142	31	.113	.928	31	.040
Post-Test Experiment Class	.132	31	.183	971	31	.539

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

From the normality test table for the experimental class above, it can be concluded that the significance value obtained from the Lilliefors test indicates that the data is significant. From the table, it is known that the significance value for the pre-test data in the experimental class is 0.133, while the significance value for the post-test data in the experimental class is 0.183. Because both significance values are greater than 0.05 (the limit used in the normality test), the data is considered to be normally distributed. Thus, the post-test and pre-test data in the experimental class have a normal data distribution. This indicates that the data is suitable for further statistical analysis

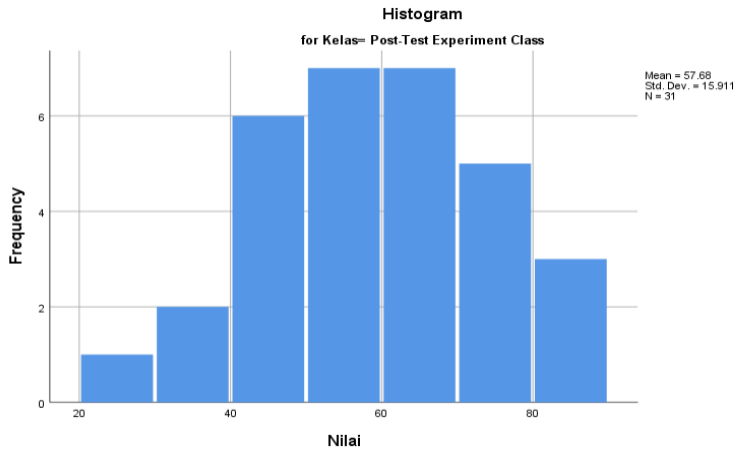

Figure 3. Histogram of Experimental Class Pre-test (VII G)

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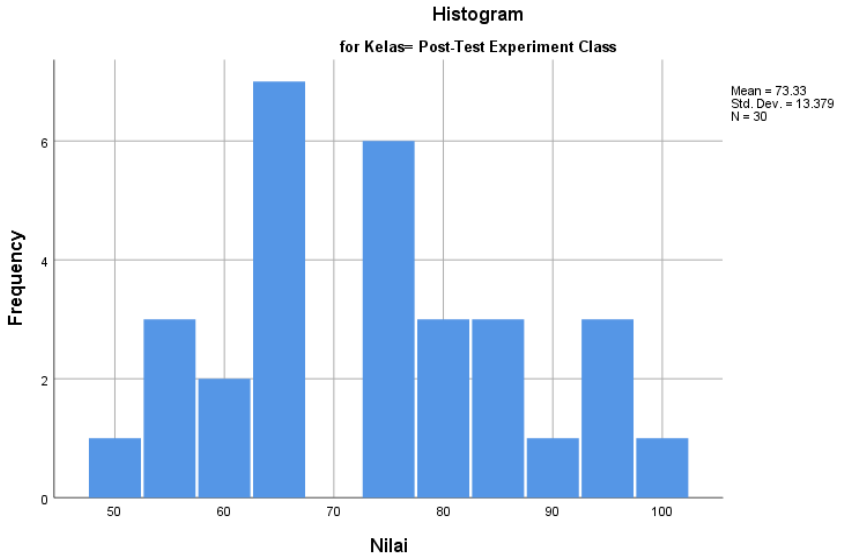

Figure 4. Histogram of Experimental Class Post-test (VII G)

Table 6. Test of Normality Control Class (VII.B)

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pre-Test Control Class	.118	31	.200*	.916	31	.018
Post-Test Control Class	.136	31	.149	.964	31	.381

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

From the table, it can be seen that the significance value for the pre-test data in the control class is 0.200, while the significance value for the post-test data in the experimental class is 0.149. Because both significance values are greater than 0.05 (the limit used in the normality test), the data is considered to be normally distributed. Thus, the post-test and pre-test data in the experimental class have a normal data distribution.

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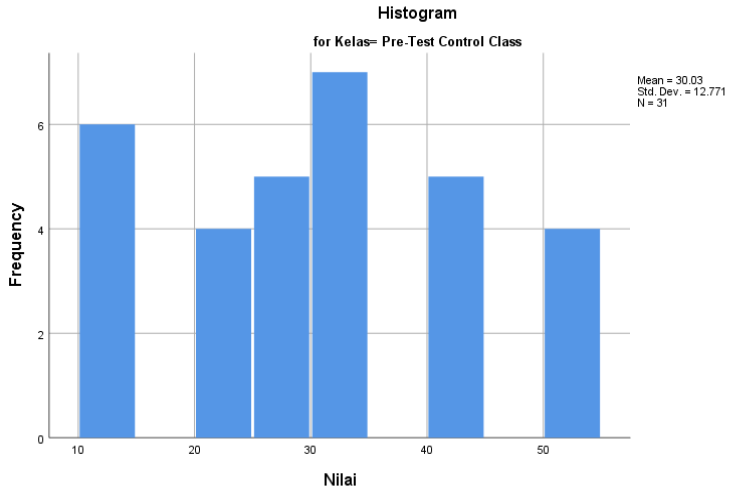

Figure 5. Histogram of Control Class Pre test-test (VII B)

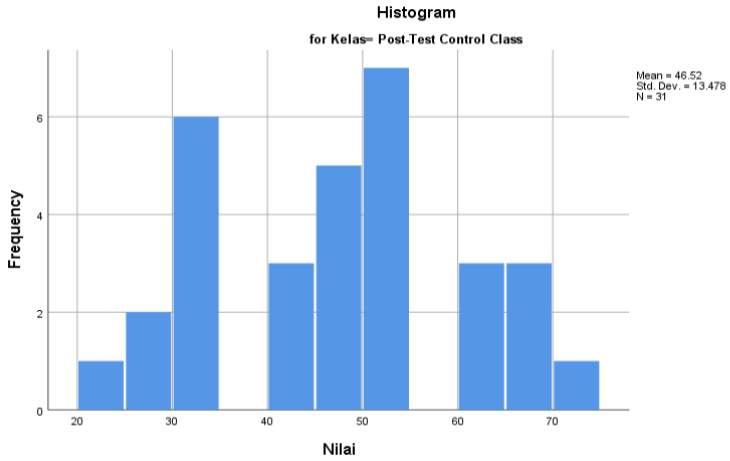

Figure 6. Histogram of Control Class Post-test (VII B)

b. Homogenity Test

After conducting the normality test, the researchers proceeded with the homogeneity test to determine whether the variance between the experimental class and the control class was similar. This test was conducted using SPSS with the Levene test, which aims to assess whether the two groups had equivalent variance. The assessment criterion was that if the significance value was greater than 0.05, the data was considered homogeneous. The following are the results of the homogeneity test obtained:

Table 7. Test of Homogenity of Varience Pre Test

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
Based on Mean	.001	1	60	.981
Based on Median	.018	1	60	.894

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Pre-Test	Based on Median and with adjusted df	.018	1	59.842	.894
	Based on trimmed mean	.000	1	60	.992

Table 8. Test of Homogenity of Varience Post Test

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
Post-Test	Based on Mean	.928	1	60	.339
	Based on Median	.692	1	60	.409
	Based on Median and with adjusted df	.692	1	55.362	.409
	Based on trimmed mean	.935	1	60	.337

Based on the Levene test results, it was found that the significance values for the pre-test and post-test in the experimental and control classes were greater than 0.05, which means that both groups had homogeneous variance. In the experimental class, the significance values of various calculation methods (mean, median, and truncated mean) ranged from 0.894, all of which exceeded the limit of 0.05. This indicates that the variance between the two groups in the pre-test was homogeneous. Meanwhile, in the control class, the significance value obtained was also greater than 0.05, namely 0.337. Thus, it can be concluded that the data from the experimental class and the control class were homogeneous, because the significance value obtained exceeded 0.05 in the Levene test, indicating that the variance of the two groups was similar.

c. T-Test

After confirming that the data from both groups, namely the experimental class and the control class, were normally distributed and had homogeneous variance, the next step was to perform statistical analysis using the t-test. This test was used to compare the two groups, in this case to determine whether the learning outcomes of students in the experimental class were higher than those in the control class. Data analysis was performed using the SPSS 25 statistical program, and the data analyzed were the post-test scores of both classes after the learning treatment was administered.

Table 9. The T-Test Result

Group Statistics

Kelas		N	Mean	Std. Deviation	Std. Error Mean
Nilai.Posttest	Post-Test Experiment Class	31	57.68	15.911	2.858
	Post-Test Control Class	31	46.52	13.478	2.421

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Table 10. The Independent Sample Test

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Nilai Post-Test	Equal variances assumed	.928	.339	2.980	60	**.000**	11.161	3.745	3.670	18.653
	Equal variances not assumed			2.980	58.420	**.000**	11.161	3.745	3.666	18.657

A post-test was conducted to determine whether there was a difference in learning outcomes between the experimental class and the control class after the treatment was given. Based on the results in the Independent Samples Test Table, the average post-test score of students in the experimental class reached 57.68 with a standard deviation of 15.911, while the control class obtained an average of 46.52 with a standard deviation of 13.478. The difference between the two classes' averages was 11.161, indicating that students in the experimental class had better learning outcomes after learning using the project-based learning method.

To determine whether this difference was statistically significant, a t-test (Independent Samples T-Test) was conducted. The test results showed that the t-value was 2.980 with a significance value (Sig. 2-tailed) of 0.000. Meanwhile, the t-table value at a significance level of 5% is 1.671. Because the t-count is greater than the t-table (5.603 > 1.683) and the significance value is less than 0.05 (0.000 < 0.05), it can be concluded that there is a significant difference between the post-test results of the two classes. Thus, the application of the project-based learning method in the experimental class proved to be effective in improving students' English speaking skills.

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d. F-Test

To determine whether differences in student abilities are influenced by several factors individually or collectively, an F test, which is part of covariance analysis (ANCOVA), was conducted. This test aims to ensure that the variables studied have a significant effect and do not occur by chance. The F test is very important because it shows the extent to which the treatment in the study has a real effect on improving students' vocabulary mastery. If the F test results show a significant effect, then it can be said that the treatment was successful.

Table 11. The Ancova Test

Tests of Between-Subjects Effects

Dependent Variable: nilai post-test

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	7357.310[a]	1	7357.310	57.946	.000	.491
Intercept	4801.821	1	4801.821	37.819	.000	.387
Kelas	7357.310	1	7357.310	57.946	.000	.491
Error	7618.109	60	126.968			
Total	183248.000	62				
Corrected Total	14975.419	61				

a. R Squared = .491 (Adjusted R Squared = .483)

Based on the F test results in this study, the calculated F value was 57.946, while the table F value was 4.00. Therefore, it can be concluded that Ho is rejected and Ha is accepted. This means that there is a significant effect of the application of the project-based learning method on improving students' speaking skills.

In addition, based on the Partial Eta Squared value of 0.491, it can be seen that learning with the project-based learning method has an effect of 49.1% on improving students' vocabulary mastery. This value is obtained by multiplying the Partial Eta Squared (0.491) by 100, resulting in 49.1%. Based on the interpretation of the effect size, this value falls into the category of a modest effect.

Discussion

Based on the results of data analysis on seventh grade students at SMPN 16 Bengkulu City, it was found that there was a significant increase in students' vocabulary mastery after participating in learning that applied the project-based learning method. This shows that the project-based learning method is able to create a fun learning atmosphere while effectively improving students' speaking skills. In the initial stage of the study, a pre-test was conducted on two classes, namely the experimental class and the control class. The average pre-test score for the experimental class was 34,94, while the control class obtained an average score of 30,04. This difference shows that the initial abilities of the two classes were relatively balanced, although the experimental class was slightly superior. After implementing project-based learning for four sessions, the average post-test score of the experimental class increased to 57,68, while the control class, which used conventional methods, only increased to 46,52. Thus, the increase in scores in the experimental class

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reached 22,74 points, while the control class only increased by 16,48 points. These results show that the implementation of project-based learning is effective in improving students' speaking skills.

Next, normality testing was conducted using the Kolmogorov Smirnov method. The test results showed a significance value (Sig.) for the pre-test of the experimental class of 0.113 and for the post-test of 0.183. For the control class, the Sig. value for the pre-test was 0.200 and for the post-test was 0.149. Since all Sig. values were greater than 0.05, it can be concluded that the data from both classes were normally distributed, so the analysis could be continued using parametric tests, such as the t-test. In addition, the homogeneity test using the Levene Test showed a significance value of 0.981 for the pre test and 0.339 for the post test. Since both values are greater than 0.05, the data of the two groups are considered homogeneous, meaning that there is no significant difference in variance between the groups.

The next step is to conduct an Independent Sample T-Test to determine whether there is a significant difference between the learning outcomes of the experimental class and the control class. The test results show that the calculated T value is 2.980 with a Sig. (2-tailed) value of 0.000. Since the Sig. value is less than 0.05 and the calculated T is greater than the table T (1.671), it can be concluded that there is a significant difference between the post-test results of the two classes. In other words, the application of the project-based learning method has a real effect on improving students' speaking skills.

Thus, the results of statistical analysis show that the application of the project-based learning method has a significant effect on improving the speaking skills of seventh-grade students at SMPN 16 Bengkulu City. These results not only prove the validity of the research hypothesis, but also reinforce the theory of project-based learning, which emphasizes the importance of engaging learning, real-world projects, and direct student involvement in improving learning outcomes. It is hoped that this research can make a positive contribution to teachers and students in creating more effective English language learning, particularly in speaking skills.

CONCLUSION

Based on the results of research conducted on seventh grade students at SMPN 16 Bengkulu City, it can be concluded that the application of the project-based learning method has a significant effect on improving students' speaking skills. In this study, the experimental class received treatment with the application of the project-based learning method during four meetings, while the control class did not receive the same treatment and continued to use conventional learning methods.

In the experimental class that applied the project-based learning method, the lowest pre-test score was 13 and the highest was 53. Then, in the post-test, the lowest score increased to 20 and the highest to 86, with an average score of 57,68. Meanwhile, in the control class that learned using conventional methods, the lowest pre-test score was 13 and the highest was 53, then increased to 26 and 73 on the post-test, with an average score of 46,52. Statistical analysis using SPSS version 25 showed a calculated F value of 57.946 with a partial eta squared of 49.1%. Since the calculated F value is greater than the table F value (4.00), it can be concluded that there is a significant effect on speaking skills between students who apply the project-based learning method and those who do not. Thus, the application of this method is proven to be effective in improving the speaking skills of seventh-grade students at SMPN 16 Bengkulu City.

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