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THE EFFECT OF PROJECT BASED LEARNING (PjBL) MODEL ON STUDENTS' WRITING PROCEDURE TEXT ASSISTED BY YOUTUBE

Dinda Tsurmaiza Fajhrin Sitorus[1], Putri Lidiana Permata Sari[2]
Universitas Asahan. Indonesia[1.2]

Email : dinda.tsurmaiza.fajrin93@gmail.com
Email : putrilidiana88@gmail.com

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ABSTRACT : This study aimed to find out The Effect of Project Based Learning (PjBL) Model on Students' Writing Procedure Text Assisted by Youtube at Grade XI of SMA Negeri 1 Simpang Empat. This research used a quantitative approach with a quasi-experimental design by applying a pre-test and post-test design. The population of this study consisted of grade XI students in the 2025/2026 academic year. The sample was divided into two groups, namely the experimental group (XI IPA 1) and the control group (XI IPA 2), with 35 students in each class. The experimental group was taught by using the Project-Based Learning model assisted by YouTube, while the control group was taught by using conventional teaching methods. The instrument used in collecting the data was a writing test in the form of a procedure text, which was administered as a pre-test and post-test. The result showed that the mean score of the experimental group increased from 58,42 in the pre-test to 80,29 in the post-test, while the control group increased from 53,57 in the pre-test to 66,57 in the post-test. The result of the t-test calculation showed that the value of t-test was 4,51, which was higher than the value of t-table 1,995 at the level of significance 0,05 with the degree of freedom (df) 68. Therefore, the alternative hypothesis (Ha) was accepted and the null hypothesis (Ho) was rejected. It can be concluded that Project-Based Learning assisted by YouTube has a significant effect on students' ability in writing procedure text at the grade XI of SMA Negeri 1 Simpang Empat.

Keywords: Project-Based Learning, YouTube, Writing Ability, Procedure Text.

ABSTRAK: Penelitian ini bertujuan untuk mengetahui Pengaruh Model Pembelajaran Berbasis Proyek (Project Based Learning/PjBL) terhadap Kemampuan Menulis Teks Prosedur Siswa yang Berbantuan YouTube di Kelas XI SMA Negeri 1 Simpang Empat. Penelitian ini menggunakan pendekatan kuantitatif dengan desain kuasi-eksperimen melalui penerapan rancangan pre-test dan post-test. Populasi penelitian ini adalah siswa kelas XI tahun ajaran 2025/2026. Sampel dibagi menjadi dua kelompok, yaitu kelompok eksperimen (XI IPA 1) dan kelompok kontrol (XI IPA 2), dengan masing-masing kelas berjumlah 35 siswa. Kelompok eksperimen diajar menggunakan model Pembelajaran Berbasis Proyek berbantuan YouTube, sedangkan kelompok kontrol diajar menggunakan metode pengajaran konvensional. Instrumen yang digunakan dalam pengumpulan data adalah tes menulis berupa teks prosedur, yang dilaksanakan sebagai pre-test dan post-test. Hasil penelitian menunjukkan bahwa nilai rata-rata kelompok eksperimen meningkat dari 58,42 pada pre-test menjadi 80,29 pada post-test, sedangkan kelompok kontrol meningkat dari 53,57 pada pre-test menjadi 66,57 pada post-test. Hasil perhitungan uji-t menunjukkan bahwa nilai t-hitung adalah 4,51, yang lebih tinggi dari nilai t-tabel sebesar 1,995 pada taraf signifikansi 0,05 dengan derajat kebebasan (df) 68. Oleh karena itu, hipotesis alternatif (Ha) diterima dan hipotesis nol (Ho) ditolak. Dapat

disimpulkan bahwa Pembelajaran Berbasis Proyek berbantuan YouTube berpengaruh signifikan terhadap kemampuan siswa dalam menulis teks prosedur di kelas XI SMA Negeri 1 Simpang Empat.

Kata Kunci: Pembelajaran Berbasis Proyek, YouTube, Kemampuan Menulis, Teks Prosedur.

INTRODUCTION

Writing is an essential productive skill that allows students to express their thoughts, ideas, and experiences in a structured form. According to Khakim ((Dhananjaya et al., 2024), writing is a very important skill for learning English. It contributes significantly to academic success and communication competence. As stated by Brown (2001) in (Almashour et al., 2025), writing is a process of putting ideas into words to convey meaning, and it involves a series of stages such as planning, drafting, revising, and editing (Intan, 2019). In the context of English as a Foreign Language (EFL) in Indonesia, writing helps students to internalize language structures and vocabulary while fostering their creativity and critical thinking. However, many students still struggle with writing due to limited exposure to authentic English materials and insufficient opportunities for meaningful writing practice in the classroom (Sari et al., 2025).

To produce good writing, students need to master several aspects, including content, organization, vocabulary, grammar, and mechanics (Heaton, 1990) cited in (Jamoom, 2021). Each of these components contributes to the overall quality of writing. For example, organization ensures logical flow; vocabulary determines precision of meaning; grammar maintains clarity; and mechanics ensure accuracy in punctuation and spelling. In senior high schools, one of the text types that students must master is the procedure text, according to (Rukmana, 2022) Procedural texts are texts that aim to provide guidance or instructions on how to perform an action. Mastery of procedure text helps students develop their ability to organize steps sequentially, use imperative verbs appropriately, and structure ideas logically.

However, in reality, the teaching of writing in classrooms often remains teacher-centered, focusing heavily on grammar explanation rather than on meaningful writing activities. As a result, students tend to become passive learners and show low motivation and creativity in writing tasks. Many students at SMA Negeri 1 Simpang Empat, for instance, still find it difficult to express their ideas in English, organize their writing systematically, and use appropriate vocabulary when composing procedure texts, the example is when students were assigned to write a procedure text entitled *"How to Make a Cup of Tea"*, many of them could not arrange the steps in a logical order. Some students began their text with *"Serve the tea on a cup"* before mentioning how to boil the water or prepare the ingredients. This indicates that they did not fully understand the importance of sequencing actions chronologically, which is one of the key features of procedure text organization.

To address these challenges, it is necessary to implement an innovative and student-centered learning model that enhances students' activeness, creativity, and engagement in writing. One of the effective approaches is Project-Based Learning (PjBL). (Wahyudin, 2023) defines PjBL as "a model that organizes learning around projects," where students work collaboratively to investigate authentic problems and produce meaningful outcomes. Hasanah

et al., 2023 cited in (Paris et al., 2024) stated PjBL is a student-centered learning strategy that places a strong emphasis on active student participation. It allows students to advance their skills by receiving structured assistance on challenging tasks. In order to produce a concrete final result, this approach requires teamwork, critical thinking, and problem-solving. Rooted in Constructivist Learning Theory (Piaget, 1972; Vygotsky, 1978), PjBL emphasizes learning by doing, where students construct their own knowledge through active participation, collaboration, and reflection (Handoyo, 2025). In writing instruction, PjBL provides authentic contexts that allow students to plan, draft, revise, and publish their work, thereby fostering not only linguistic competence but also creativity and responsibility.

Moreover, to make PjBL implementation more engaging and effective, this study integrates the use of YouTube as a digital learning medium. (Sayuti et al., 2024) stated that YouTube is a global online video sharing platform that allows users to upload, watch, share, comment on, and interact with videos across a vast range of topics, including entertainment, education, news, and more. According to Mayer's (2009) Cognitive Theory of Multimedia Learning, learners understand information better when it is presented through both visual and auditory channels. YouTube offers abundant authentic materials that model how procedures are carried out in real-life contexts, making abstract instructions more concrete and comprehensible.

Therefore, the purpose of this study to find out "The Effect of Project-Based Learning (PJBL) Model on Students' Writing Procedure Text Assisted by YouTube at Grade XI of SMA Negeri 1 Simpang Empat in the 2025/2026 Academic Year." This study is significant because it seeks to fill the gap in traditional writing instruction by combining PJBL with digital media to create a more engaging and effective learning environment.

METHOD

This study used a quantitative experimental approach, specifically a quasi-experimental design by using pre- test and post-test. This design was used to find out the significant effect of Project-Based Learning (PjBL) model on students' writing procedure text assisted by YouTube.

In this study, two grade XI classes were selected as the experimental group and the control group. The experimental group received treatment by using the Project-Based Learning (PjBL) model assisted by YouTube, while the control group received treatment by using conventional methods. Both groups was given a pre-test and a post-test to measure the improvement in students' writing ability.

Table 1 The Procedure of Experimental and Control Group

Group	Pre-Test	Treatment	Post Test
Experimental Group	√	X	√
Control Group	√	Y	√

Where :

X : Treatment using Project Based Learning (PjBL) Model

Y : Using conventional teaching methods

In this study, a writing test was used as the main tool for data collection. The test is designed to measure students' ability to write procedure texts before and after the implementation of the Project-Based Learning (PjBL) model assisted by YouTube.

The type of instrument used in this study is a written test. The test consists of two parts:

1. Pre-test, was administered before the treatment to both experimental and control groups to measure the students' initial writing ability.
2. Post-test, was administered after the treatment to measure the improvement of students' writing ability in procedure text.

The data obtained from the pre-test and post-test of both experimental and control groups were analyzed using quantitative statistical procedures. The data analysis technique in this study was used the t-test. The formula of T test was :

$$t = \frac{M_x - M_y}{\sqrt{\left(\frac{X_2 + Y_2}{N_x + N_y - 2}\right)\left(\frac{1}{N_x} + \frac{1}{N_y}\right)}}$$

Where:

N_x = The total number sample of experimental group

N_y = The total number sample of control group

M_x = Mean of experimental group

M_y = Mean of control group

X_2 = Standart deviation of experimental group

Y_2 = Standart deviation of control group

RESULT AND DISCUSSION

This study was conducted on 3rd February to 13th February 2026, at SMA Negeri 1 Simpang Empat, involving grade XI students in the 2025/2026 academic year. Data were obtained from pre-test and post-test administered to the experimental and control groups. The research sample consisted of 70 students, divided into two classes, namely class XI IPA 1, consisting of 35 students, as the experimental group, and class XI IPA 2, consisting of 35

students, as the control group. Both classes were given the same writing test to ensure consistency and comparability of data.

1. The Data of Experimental Group and Control Group

The table below shows the scores of students in the pre-test and post-test of the experimental group (XI IPA 1) and the scores of students in the pre-test and post-test of the control group (XI IPA 2).

Table 2 The Result of Pre-Test and Post-Test in Experimental Group

No	Student's Initial	Pre Test (X)	Post Test (Y)	X^2	Y^2	XY
1	AKS	70	85	4900	7225	5950
2	ASB	60	75	3600	5625	4500
3	ARZN	65	85	4225	7225	5525
4	AMK	40	75	1600	5625	3000
5	AB	90	95	8100	9025	8550
6	ASR	40	55	1600	3025	2200
7	AUP	60	80	3600	6400	4800
8	AM	65	85	4225	7225	5525
9	AT	80	95	6400	9025	7600
10	A	60	75	3600	5625	4500
11	AAI	90	95	8100	9025	8550
12	B	40	90	1600	8100	3600
13	CABS	65	85	4225	7225	5525
14	DA	55	75	3025	5625	4125
15	DHA	60	80	3600	6400	4800
16	DMU	70	90	4900	8100	6300
17	DWA	60	80	3600	6400	4800
18	ER	65	95	4225	9025	6175
19	FAFN	65	95	4225	9025	6175
20	IR	60	85	3600	7225	5100
21	JF	60	95	3600	9025	5700
22	KA	30	40	900	1600	1200
23	KFS	40	55	1600	3025	2200
24	DTN	75	95	5625	9025	7125
25	MP	70	90	4900	8100	6300
26	MS	55	85	3025	7225	4675
27	MPL	55	75	3025	5625	4125
28	MAS	40	65	1600	4225	2600
29	MEA	55	90	3025	8100	4950
30	MF	70	90	4900	8100	6300
31	M	40	75	1600	5625	3000
32	MZ	45	60	2025	3600	2700
33	MSR	40	50	1600	2500	2000

34	NK	50	90	2500	8100	4500
35	RAQ	60	80	3600	6400	4800
N = 35		ΣX= 2045	ΣY= 2810	ΣX^2= 126475	ΣY^2= 232450	ΣXY= 169475

Based on the table above, it showed that:

Mean of pre-test :

$$M = \frac{\sum x}{N}$$

$$M = \frac{2045}{35}$$

$$M = 58{,}42$$

Mean of post-test :

$$M = \frac{\sum y}{N}$$

$$M = \frac{2810}{35}$$

$$M = 80{,}29$$

From the data above, it showed that student's score in pre-test was lower than post-test in experimental class. The mean of student's score in pre-test was 58,42 and after giving the material by using PjBL model assisted by YouTube the score mean was being 80,29 in post-test, it increased 37,43%.

Table 3 The Result of Pre-Test and Post-Test in Control Group

No	Student's Initial	Pre Test (X)	Post Test (Y)	X^2	Y^2	XY
1	AL	50	60	2500	3600	3000
2	ASP	50	65	2500	4225	3250
3	AR	50	65	2500	4225	3250
4	ANF	40	55	1600	3025	2200
5	BNA	50	60	2500	3600	3000
6	BP	40	55	1600	3025	2200
7	BAK	55	65	3025	4225	3575
8	BRD	55	40	3025	1600	2200
9	CMN	60	70	3600	4900	4200
10	DNP	25	45	625	2025	1125
11	DS	50	60	2500	3600	3000
12	DVS	40	60	1600	3600	2400
13	DCU	50	50	2500	2500	2500
14	HH	50	60	2500	3600	3000
15	KOA	50	55	2500	3025	2750
16	KN	55	75	3025	5625	4125
17	KZ	60	70	3600	4900	4200
18	LA	40	55	1600	3025	2200

19	LI	40	55	1600	3025	2200
20	MR	60	75	3600	5625	4500
21	MAR	65	75	4225	5625	4875
22	MRS	50	70	2500	4900	3500
23	MAS	60	75	3600	5625	4500
24	NH	40	45	1600	2025	1800
25	NF	65	75	4225	5625	4875
26	NPSS	60	70	3600	4900	4200
27	NIA	60	75	3600	5625	4500
28	NPA	80	90	6400	8100	7200
29	NRAH	50	90	2500	8100	4500
30	RHS	50	80	2500	6400	4000
31	RDKB	65	70	4225	4900	4550
32	RAS	75	85	5625	7225	6375
33	RK	40	70	1600	4900	2800
34	ZAF	75	95	5625	9025	7125
35	MU	70	70	4900	4900	4900
		ΣX=	ΣY=	ΣX^2=	ΣY^2=	ΣXY=
N = 35		1875	2330	105225	160850	128575

Based on the table above, it showed that :

Mean of pre-test :

$$M = \frac{\sum x}{N}$$

$$M = \frac{1875}{35}$$

$$M = 53{,}57$$

Mean of post-test :

$$M = \frac{\sum y}{N}$$

$$M = \frac{2330}{35}$$

$$M = 66{,}57$$

From the data above, it showed that student's score in pre-test was lower than post-test in control class. The mean of student's score in pre-test was 53,57 and after giving the material by using conventional methods the score mean was being 66,57 in post-test, it increased 24,26%.

After obtaining the pre-test and post-test results from the experimental group and the control group, the next step is to analyze the data using the t-test formula. The t-test is used to determine whether there is a significant difference between the mean scores of the two classes after the treatment.

This analysis aims to evaluate the effect of the treatment applied to the experimental group compared to the control group. By comparing the calculated t-value (t-count) with the critical value in the t-table at a certain significance level, it can be determined whether the

alternative hypothesis (Ha) is accepted or the null hypothesis (Ho) is rejected. Therefore, t-test analysis plays an important role in answering the research hypothesis in this study. The t-test calculation can be seen as follow:

$$t = \frac{M_x - M_y}{\sqrt{\left(\frac{X_2 + Y_2}{N_x + N_y - 2}\right)\left(\frac{1}{N_x} + \frac{1}{N_y}\right)}}$$

Where:

N_x = The total number sample of experimental group (35)

N_y = The total number sample of control group (35)

M_x = Mean of experimental group (80,29)

M_y = Mean of control group (66,57)

X_2 = Standart deviation of experimental group (6847,1)

Y_2 = Standart deviation of control group (5738,6)

$$t = \frac{80{,}29 - 66{,}57}{\sqrt{\left(\frac{6847{,}1 + 5738{,}6}{35 + 35 - 2}\right)\left(\frac{1}{35} + \frac{1}{35}\right)}}$$

$$t = \frac{13{,}72}{\sqrt{\left(\frac{12585{,}7}{68}\right)\left(\frac{2}{35}\right)}}$$

$$t = \frac{13{,}72}{\sqrt{(185{,}08)(0{,}05)}}$$

$$t = \frac{13{,}72}{\sqrt{9{,}254}}$$

$$t = \frac{13{,}72}{3{,}04}$$

$$t = 4{,}51$$

So, t-test or t-count = 4,51

To know degree of freedom (df) is used the formula :

Df = $N_1 + N_2 - 2$

Df = 35 + 35 – 2

Df = 68

Based on this calculation, the degrees of freedom (df) used in this study is 68. After determining the degrees of freedom, the next step is to find the critical value of the t-table at a significance level of 0,05 (5%). According to the t-distribution table, the critical value of the t-table for df = 68 at a significance level of 0,05 is 1,995.

From the statistical calculations, the t-test value obtained (t-count) in this study is 4,51. When this value is compared to the t-table value (1,995), it can be seen that 4,51 is higher than 1,995. In other words, t-test > t-table (4,51 > 1,995).

These results indicate that there is a significant difference between the experimental group and the control group. Therefore, the alternative hypothesis (Ha) is accepted, while the null hypothesis (Ho) is rejected. This means that the implementation of Project-Based Learning (PjBL) has a significant effect on students' writing skills.

CONCLUSION

Based on the results of the research, it can be concluded that the use of Project-Based Learning (PjBL) has a significant effect on students' writing ability. The results of the data analysis also showed that students in the experimental group achieved better improvement than those in the control group. The mean score of students in the experimental class after the treatment was 80,29, while the mean score of students in the control class was 66,57. This result indicates that students who were taught by using Project-Based Learning obtained higher learning outcomes in writing compared to students who were taught without applying this learning model.

In addition, the results of hypothesis testing using the t-test formula show that the t-test value is higher than the t-table (4.51 > 1.995), so the alternative hypothesis (Ha) is accepted and the null hypothesis (Ho) is rejected. Therefore, it can be concluded that the application of Project-Based Learning significantly improves students' writing skills.

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