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#### **Reg. Offices:**

**India:** Guest House Road, Street no - 1/6, Hooghly, West Bengal, India, Tele: +91 8617752708  
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# Development of Student Worksheets Write Project Based Learning-based Explanatory Text for Class XI Senior High School

Miftakhul Hidayati <sup>a\*</sup>, Nurlaksana Eko Rusminto <sup>a</sup> and **Muhammad Fuad** <sup>a</sup>

<sup>a</sup> Cempedak Street No. 246 Yosomulyo Metro City. Lampung University, Indonesia.

## Authors' contributions

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

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## ABSTRACT

**Aim:** The aim of this research is to produce student worksheets using project based learning model, describe the feasibility of students worksheets using project based learning, and determine the effectiveness of students worksheets using project based learning model.

**Study Design:** Research and Development.

**Background:** The problem in this research is related to the development of Student Worksheets writing project-based learning texts of class XI high school learners. The purpose of this study is to produce students worksheet teaching materials to write project-based learning explanatory texts, knowing the feasibility and effectiveness of student worksheets in writing explanatory texts in grade XI high school learners.

**Research Methods:** Methods used in this research and development (R&D) research and also uses two method, qualitative and quantitative methods. Data collection techniques with observations, interviews and deployment of questionnaires at three schools in Metro City.

**Research Results:** The results showed that the product was successfully developed in the form of students worksheet writing project based learning explanatory text, the feasibility of students work sheet as a whole was declared "very feasible" by material experts, learning experts and practitioners with percentages of 82%, 84%, and 85.71%. Students worksheet effectively improves explanatory text writing capabilities with N-Gain by (0.38) (0.38) and (0.37) falls into the "medium" category.

*Keywords: LKPD; explanatory text; project based learning.*

## 1. INTRODUCTION

### 1.1 Background Problem

Learning Indonesian basically aims to provide provisions to learners in the ability to communicate effectively and efficiently both oral and written. Effective and efficient learning does not occur by itself but is designed by teachers through the management of learning and utilization of learning resources in creating an atmosphere conducive to purpose [1].

Skills performed in language learning are the skills of listening, speaking, reading and writing. These skills have their own realms but each other is closely related in learning Indonesian learners compared to the other three One of the language skills is writing skills. These skills are the highest level of difficulty for skills [2].

One of the subjects achieved in the 2013 curriculum is the Indonesian regulated by Minister of Education and culture of the Republic Of Indonesia number 24 of 2016 on core competencies and basic competencies in the 2013 curriculum for primary, secondary, and upper education [3,4]. In the 2013 curriculum for writing skills lessons in High School Class XI learners, one of them contained an explanation text. The explanatory text is taught to students of class XI odd semesters in accordance with basic competencies 3.4 Analyze the structure of the explanatory text and 4.4 produces explanatory text with regard to structure and language. Explanatory text is arranged with a structure consisting of parts that show general statements (openings), a series of explanations (contents), and interpretations / closing. Both the first and second statements are equally true and complementary [5].

Based on preliminary studies obtained the results of questionnaire interviews in three schools that the availability of students work sheet teaching materials used in three schools in preliminary Problems also arise in learning, there is no learning model in each lesson so that students feel uninterested, therefore the author adds a learning model namely the use of learning models in teaching and learning activities, therefore researchers want to use a learning model that is a learning model that is project based learning is a model with long-term activities that involve learners in designing,

creating, and displaying products to overcome real-world problems.

### 1.2 Problem Formula

Based on this background, the formulation of the problems in this study is as follows,

1. how the development of student.

Based explanatory texts for Class XI high worksheets writes project based learning-studies that researchers do does not yet exist, but there is one school that uses student worksheet but which is used is not artificial by teacher subjects, and has not been equipped regarding writing explanatory text [6]. In this study using teaching materials in the form of student worksheets (LKPD) are sheets containing tasks that must be done by learners. school learners.

- 2 how the feasibility of student worksheets development writes project-based learning project-based learning texts of class XI high school learners
- 3 how effective the development of student worksheets project-based learning-based explanatory text for High School Class XI learners

### 1.3 Research Objectives

Based on the background and formulation of the problem, this study aims to,

- 1 Produce Teaching Materials For student worksheets Writing Explanatory Texts Based On Project Based Learning For Class XI SMA Students
- 2 Describe The Feasibility Of student worksheets Writing Explanatory Texts Based On Project Based Learning For Class XI High School Students
- 3 Knowing The Effectiveness Of ProjectBased Learning-Based Explanatory Text Worksheets For High School Students Class XI semester.

## 2. RESEARCH METHODOLOGY

### 2.1 Development Model

This research is a type of development research or in English Research and Development (R&D). Data collection techniques conducting of

interview on teachers and filling of questionnaires by teachers and students. The test subject in this study were material experts, learning, practitioners, and students from senior high school TMI Roudlotul Qur'an, Roudlotul Tholibin, and Ma'arif 1 metro city. In this study, two data analysis techniques were used, namely qualitative descriptive analysis and quantitative descriptive analysis. Qualitative data in the form of criticism and suggestion for improvement contained in the questionnaire. The result of this data analysis are then used as a reference for revising of the product quantitative descriptive data analysis technique were used determine the feasibility and effectiveness of teaching materials [7].

## 2.2 The Place of Study

Conducted at Senior High School Roudlotul Qur'an Metro, RoudlotulTholibin Metro, and Ma'arif High School 1 Metro 2021/2022. The research was conducted with consideration of time, energy, and cost efficiency and also pandemic covid-19.

## 2.3 Steps of Research Development

This research and development uses the Borg and Gall [8] model that education development research is a process used to develop and validate educational product. According to Tegeh, etc [9] the Borg and Gall development model consists of the ten stages, namely research and information gathering stages, planning, initial product development, field test preparation, main product revision, main field test, product revision implementation, and field test, operations, final product revision, and development and implementation.

The research procedure was simplified into seven Borg and Gall stages this is adjusted to the characteristics, limitations of time, cost and energy, as well as the covid-19 pandemic, among others; 1) potential and problems; 2) data collection of teaching materials; 3) development of teaching materials through product design and development of initial product forms; 4) product evaluation through validation by relevant experts/experts; 5) revision of the product design as a result of validation; 6) testing of the product on peers and limited-scale class trials and revision of the test results followed by largescale class trials; 7) revise it into an operational product in the form of LKPD which is ready to be tested for its effectiveness.

## 2.4 Product Specification Development

The research development product that will be produced is in the form of student worksheets to write explanatory texts based on project based learning for class XI high school students with the following specifications:

1. This student worksheet is an assignment sheet that must be done by class XI SMA students
2. Student worksheets contain instructions and activities to complete assignments in accordance with the basic competencies of writing explanatory text material to understand how students can make explanatory texts
3. This student worksheet is structured with the title, learning instructions, basic competencies to be achieved, tasks and steps of work and assessment

## 2.5 Preliminary Study

Research and development of student worksheets begin with a need analysis. Based on the result of the observation and interviews, they were analyzed to obtain an appropriate description of the condition of learning, studentworksheets, and learning model used. The result of the analysis of the need teaching student worksheet, namely student worksheets to write explanatory text that are tailored to the needs and characteristics students of senior high school Roudlotul Qur'an, Roudlotul Tholibin and Ma'arif 1 Metro City.

### 2.5.1 Product design and development

The design of student worksheets begins with determining a map of teaching needs material compiled based on the analysis of material needs that must be prepared in teaching product. The general structure of the student worksheet is the title, materials, study instructions (student instructions), competencies to be achieved, supporting information, assignments, work steps, and assessment.

### 2.5.2 Product evaluation

The evaluations of the development of student worksheets is carried out in four stages, namely: (1) expert test relevant to the field of the study, (2) practitioner expert test, namely high school



Indonesian language teachers, (3) small-scale trial (30 students), (4) large-scale trial (3 classes = 66 students)

## 2.6 Data Collection Techniques

Data collection technique in this study are as follows:

1. Documentary
2. Observation
3. Interview
4. Questionnaire

## 2.7 Research Instrument

Instrument used in this study to assess the work location of students. This study uses a questionnaire sheet about the feasibility of students worksheets that have been prepared.

## 2.8 Data analysis techniques

The data analysis technique in this study used a qualitative descriptive technique. The data analysis was carried out by examining the validity sheet for the expert test, student questionnaire sheet, and teachers questionnaire sheet.

- a. The analysis of the questionnaire sheet for Material expert, Learning Experts, and Practitioners (Teacher) was changed from qualitative to quantitative form.
- b. After the data was collected, the average score of each aspect of the criteria is calculated using the following formula [10].

$$X = \frac{\sum X}{N}$$

Description;

X = average score

N = number of ratings

$\sum x$  = number of scores

- c. After calculating the average score of all assessment criteria, then it is converted into percentage/proportion results. The percentage score is obtained by calculating the average answer based on the assessment instrument according to 1 material expert, 1 learning expert, 1 practitioner expert, 1 teacher senior high school. The formula for calculating the percentage of the feasibility of teaching materials is as follows.

$$\text{Percentage} = \frac{\text{total score}}{\text{max score}} \times 100$$

The score from the calculation will indicate the exact location: "Development of Student Worksheets for Writing Explanatory Texts based on project-based learning" from material experts, learning experts, practices, teachers and high school students Roudlotul Qur'an, Roudlotul Tholibin, and Ma'arif 1 Metro. The result of the percentage score is convert it into qualitative data by using a score interpretation that is in accordance with Riduwan & Sunarto [11].

**Table 1. Eligibility level criteria**

No	Score Range	Criteria
1	21 % - 40%	Less Worthy
2	41 % - 60%	Decent Enough
3	61% - 80 %	Worthy
4	81% - 100 %	Very worth it

Calculation of the effectiveness of teaching materials by calculating the average pretest, posttest, and N-gain. which was developed according to Smeltzer (2002). To test the effectiveness of the product, manual calculations are used, namely the N-Gain effectiveness formula, as follows.

$$N - \text{Gain} = \frac{\text{posttest score} - \text{initial ability test scores}}{\text{max score} - \text{initial ability test scores}}$$

Description:

N-Gain : Normalized gain

Pretest: The initial value of learning

Posttest: The final value of learning

Furthermore, the gain score is obtained as a comparison of the actual gain with the maximum gain. The actual gain is the difference between the posttest scores and the pretest scores. The N-gain formula is as follows: The N-gain interpretation criteria proposed by Smeltzer (2002).

**Table 2.**

Average Gain	Normalized	Interpretation Criteria
$g > 0,7$		Tall
$0,3 < g \leq 0,7$		Currently
$g \leq 0,3$		Low

### 3. RESULTS AND DISCUSSION

#### 3.1 Preliminary Study

The results of this study explain three things, first the development of students worksheets writing project based learning-based explanatory text for High School class XI learners in accordance with the curriculum of the 2013 revised edition. Second, the results of student worksheets eligibility write an explanatory text with a Project Based Learning model for high school students in class XI. Third, the effectiveness of student worksheets writing Project Based Learningbased explanatory texts for class XI high school learners based on the assessment of material experts, learning experts, practitioners (peers), teachers, and learners based on Research and Development (R&D) research design.

The results of the preliminary study that has been carried out to obtain information about field conditions, needs, and the development of learning materials in the form of student worksheets. The results of the preliminary study are used to design and develop the product. The preliminary study was conducted through observations and interviews with teachers at

three schools, namely TMI Roudlotul Qur'an High School, Roudlotut Tholibin High School, and Ma'arif 1 Metro. The results of interviews with the three Indonesian language teachers at the three high schools did not yet have a learning model implemented at the time of learning.

#### 3.2 Development Process

The product development process, namely, (1) The basic competence analysis stage, core competence and indicators of competency achievement, (2) describe indicators, (3) designing a grid for the preparation of questions, (4) designing a question format and assessment rubric, (5) assessing student results. Product evaluation is carried out by material experts, learning experts, and practitioners here are the results of the expert tests.

Based on the assessments of material experts, learning, and practitioners, it can be concluded that the product of student worksheets write project based learning-based explanatory text is included in the category of very feasible to be tested on school.

**Table 3. Results of the expert tests**

No	Expert	Percentage	Category
1	Material	82 %	Very Worth it
2	Learning	84 %	Very Worth it
3	Practitioners	85,71 %	Very Worth it

**Table 4. Limited-Scale trial result TMI Roudlotul Qur'an Senior High School**

ResearchSubj ect	The Attractiveness of LKPD		Easeof Use		Benefitsof LKPD		Feasibility	
	Total	Value	Total	Value	Total	Value	Total	Value
1	35	87,5	24	85,71	11	91,66	70	87,5
2	33	82,5	22	78,5	12	80	67	83
3	35	87,5	25	89,28	11	91,66	71	88,75
4	39	97,5	23	82,14	9	75	71	88,75
5	37	92,5	27	96,42	12	100	76	95
6	38	95	24	85,71	15	93,75	77	96
7	37	92,5	26	92,85	12	100	75	93,75
8	36	90	27	96,42	11	91,66	74	92,5
9	30	75	21	75	10	83,33	61	76,25
10	30	75	21	75	9	75	60	75
<b>Average</b>	35	87,5	24	85,70	11,2	88,20	70,2	87,65



### 3.3 Product Trial

Product trials are conducted in two stages, the first is a limited scale stage trial and then the second is a wide-scale trial. The limited scale product test is intended to know the weaknesses of the product as the basis for the next product improvement, a limited scale test with a number of 30 participants, with 10 learners from 3 schools. A wide-scale product trial was conducted in three school, TMI Roudlotul Qur'an Senior High School, Roudlotut Tholobin Senior High School and Ma'arif 1 Senior High School with a total of 66 respondents. The following table present the result of the two trials.

Based on limited scale the results of the calculations above, obtained data of 10 students of TMI Roudlotul Qur'an Metro senior high school class XI related to the feasibility of students worksheets with an average value of

87.65 aspects of LKPD with an average value of 87.5 ease of use of LKPD obtained an average value of 85.70, and the usefulness of LKPD with an average value of 88.20. Thus, it can be said that the trial the use of limited-scale student work sheets at TMI Roudlotul Qur'an High School very suitable for use in learning teaching.

Based on the calculation of the limited scale above, obtained data from 10 students of class XI MA Roudlotut Tholibin related to the students worksheets aspect as a whole with an average value of 81.85 %, the results from the LKPD aspect with an average value of 80.5, the use of student worksheets obtained an average value 82.12% and the benefit of student worksheets with an average value of 84.16. Thus the use of student labor on a limited scale is indispensable for the learning process in the classroom, and has the benefit of helping students understand the material.

**Table 5. Limited-scale trial result MA roudlotut tholibin metro**

Research Subject	The Attractiveness of LKPD		Ease of Use LKPD		Benefits of LKPD		Feasibility	
	Total	Value	Total	Value	Total	Value	Total	Value
1	31	77,5	26	92,85	10	83,33	67	83,75
2	36	90	24	85,71	12	100	72	90
3	35	87,5	24	85,71	11	91,66	70	87,5
4	31	77,5	22	78,5	9	75	60	75
5	30	75	21	75	9	75	60	75
6	33	82,5	25	89,28	10	83,33	68	85
7	32	80	22	78,5	9	75	63	78,5
8	34	85	21	75	11	91,66	70	87,5
9	30	75	24	85,71	11	91,66	65	81,25
10	30	75	21	75	9	75	60	75
<b>Average</b>	<b>32,2</b>	<b>80,5</b>	<b>23</b>	<b>82,12</b>	<b>10,1</b>	<b>84,16</b>	<b>65,5</b>	<b>81,85</b>

**Table 6. Limited scale trial result SMA Ma'arif 1 metro**

Research Subject	The attractiveness of LKPD		Ease of Use LKPD		Benefits of LKPD		Feasibility	
	Total	Value	Total	Value	Total	Value	Total	Value
1	32	80	25	89,28	10	83,33	67	81,75
2	33	82.5	22	78.5	11	81.66	66	82.5
3	35	87.5	25	89,28	10	83,33	70	87,5
4	30	75	21	75	10	83,33	61	76,25
5	30	75	24	85,71	11	91,66	65	81,25
6	37	92,5	21	75	10	83,33	68	85
7	31	75	26	92,85	10	83,33	67	83,75
8	30	75	21	75	9	75	60	75
9	30	75	24	85,71	11	91,66	65	81,25
10	30	75	21	75	10	83,33	61	76,25
<b>Average</b>	<b>31,8</b>	<b>77,81</b>	<b>23</b>	<b>82,53</b>	<b>10,2</b>	<b>84,25</b>	<b>65</b>	<b>81,05</b>

Based on the results of the calculation of the limited scale above, obtained data related to feasibility with an average value 81.5 %, the students worksheets attractive aspect with average value 77.81 % the ease of use of student worksheets obtained an average value of 82.53%, and the usefulness of students worksheets with an average value of 84,25 %. The use of student worksheets on this limited scale is considered very helpful for students in understanding project based learning-based explanatory text writing.

Based on the results of the above data related to the use of all student worksheets with an average result of 86.81%, interest in the use of student worksheets obtained an average value of 86.18, aspects of the use of student worksheets with an average value of 88.67, and the usefulness of use the work value of students

with an average of 88.89%. Thus, it can be said that the use of students on a wide scale at SMAS TMI Roudlotul Qur'an as a whole is good or feasible to use in learning.

Based on the results of the above calculations, data related to the attractiveness of student worksheets obtained an average value of 83.82, aspects of the ease of use of student worksheets with an average value of 83.6 and the usefulness of using student worksheets with an average value 83.33 As a whole, when viewed from the ease of use of student worksheets, ease of use of student worksheets, and the usefulness of student worksheets, the average score is obtained with a feasibility value of 84.66. Thus, the use of participant worksheets is very important effective and feasible to use in learning.

**Table 7. Table of assessment results on a wide scale roudlotul Qur'an metro**

Research Subject	The Attractiveness of LKPD		Ease of Use of LKPD		Benefit of LKPD		Feasibility	
	Total	Value	Total	Value	Total	Value	Total	Value
1	35	87.5	24	85.71	11	91.66	70	87.5
2	32	80	22	78.5	12	100	66	82.5
3	31	77.5	26	92.85	10	83.33	67	83.75
4	36	90	28	100	12	100	78	97.5
5	36	90	24	85.71	12	100	72	90
6	38	95	28	100	10	83.33	74	92.5
7	30	75	22	78.5	11	91.66	63	78.75
8	30	75	21	75	9	75	60	75
9	31	77.5	22	78.5	10	83.33	63	78.75
10	37	92.5	26	92.85	11	91.66	74	92.5
11	40	100	25	89.28	11	91.66	76	95
12	31	77.5	22	78.5	10	83.33	63	78.75
13	35	87.5	24	85.71	10	83.33	69	86.25
14	31	77.5	22	78.5	10	83.33	63	78.75
15	36	90	28	100	12	100	78	97.5
16	35	87.5	25	89.28	10	83.33	70	87.5
17	37	92.5	26	92.8	9	75	72	90
18	36	90	25	89.28	11	91.66	72	90
19	36	90	25	89.28	10	83.33	71	88.75
20	35	87.5	25	89.28	10	83.33	70	87.5
21	36	90	25	89.28	11	91.66	72	90
22	34	85	27	96.42	11	91.66	72	90
23	35	87.5	23	82	10	83.33	68	85
24	36	90	24	85.71	11	91.66	71	88.75
25	33	82.5	25	89.28	10	83.33	68	85
26	36	90	25	89.28	11	91.66	72	90
<b>Average</b>	34.03	86.18	24.43	88.67	10.5	88.89	69.36	86.81

**Table 8. Table of assessment results on a wide scale Roudlotut Tholibin Senior High School**

Research Subject	The Attractiveness of LKPD		Ease of Use LKPD		Benefits of LKPD		Feasibility	
	Total	Value	Total	Value	Total	Value	Total	Value
1	37	92.5	26	92.85	12	100	75	93.75
2	33	82.5	22	78.5	11	81.66	66	82.5
3	37	92.5	25	89.28	11	91.66	73	91.25
4	37	92.5	25	89.28	10	83.3	72	90
5	36	90	26	76	11	91.66	73	91.25
6	37	92.5	24	85.71	9	75	70	87.5
7	35	87.5	25	89.28	10	83.3	70	87.5
8	35	87.5	24	85.71	11	91.66	70	87.5
9	34	85	21	75	11	91.66	66	82.5
10	36	90	25	89.28	10	83.3	71	88.75
11	34	85	25	89.28	10	83.3	69	86
12	30	75	21	75	10	83.3	61	76.25
13	34	85	23	82.14	10	83.3	67	83.75
14	35	87.5	25	89.28	10	83.3	70	87.5
15	36	90	23	82.14	11	91.66	70	87.5
16	36	90	25	89	11	91.66	72	90
17	30	75	21	75	9	75	60	75
18	31	77.5	24	85.71	11	91.66	66	82.5
19	31	77.5	23	82.14	11	91.66	65	81.25
20	33	82.5	20	71.42	11	91.66	64	80
<b>Average</b>	34.01	83.82	23.66	83,6	10.46	83.33	68.16	84.66

**Table 9. Table of assessment results on a wide scale Ma'arif 1 Metro Senior High School**

Research Subject	The Attractiveness of LKPD		Ease of Use LKPD		Benefits of LKPD		Feasibility	
	total	value	total	value	total	value	total	Value
1	36	90	24	85.71	9	75	70	87.5
2	36	90	25	89.28	9	75	70	87.5
3	33	82.5	24	85.71	10	83.33	72	90
4	37	92.5	24	85.71	11	91.66	70	87,5
5	38	95	26	92.85	9	75	73	91
6	35	87.5	23	82.14	9	91.66	69	86.25
7	37	92.5	24	85.71	10	83	71	88.75
8	31	77.5	23	82	9	83	64	80
9	35	87.5	24	85.71	11	91.66	70	87.5
10	37	92.5	24	85.71	9	75	70	87.5
11	36	90	25	89.25	10	83	71	88,75
12	37	92.5	24	85.71	9	75	71	88,75
13	37	92.5	26	92.85	11	91,66	74	92.5
14	38	95	27	96.42	9	75	75	93.75
15	31	77.5	24	85.71	10	83,33	65	81.25
16	37	92.5	26	92.85	11	91,66	75	93.75
17	36	90	27	96.42	9	75	72	90
18	38	95	24	85.71	15	93.75	77	96
19	36	90	23	82.14	11	91.66	70	87.5
20	39	97.5	23	82.14	9	75	71	88.75
<b>Average</b>	36	89,62	24,5	91,15	11,13	90,86	70	89,72

**Table 10. The result of feasibility of using student worksheets**

No Aspect	Location 1	Location 2	Location 3	Average	Category
1 The attractiveness of LKPD	86,18	83,82	89,62	86,54	Very Worth It
2 Ease of Use LKPD	88,67	83,6	91,15	87,80	Very Worth it
3 Benefits of LKPD	88,86	83,33	90,86	87,68	Very Worth it
Rata-rata	87.90	83,58	90	87.37	Very Worth it

**Table 11. Pretest and posttest results comparison table**

NO	Name Of School	Amount Learners	KKM	Pre Test	Post Test	N – Gain
1	SMAS TMI RoudlotulQur'an Metro	26	75	72,73	83,34	0,38
2	MA Roudlotut Tholibin Metro	20	75	72,4	82,12	0,38
3	SMA Ma'arif 1 Metro	20	75	73,25	83,2	0,37
<b>AVERAGE</b>				72,79	82,88	0,37667

Based on the calculations on the broad scale in the table above, data related to the attractiveness of student worksheets obtained an average value of 89.62%, the aspect of ease of use of student worksheets with an average value of using student worksheets with an average value of 97.98%. The values of 89.72% are very feasible. Thus, it can be said that the trial of the use of large-scale student worksheets at Ma'arif 1 Senior High School Metro is generally good or very suitable for use in learning.

Based on the above, it can be explained that the attractiveness aspect of LKPD obtained an average score of 86.54, the ease of LKPD obtained an average score of 87.80 and the usefulness of LKPD obtained an average score of 87.37. Thus, it is concluded that the broadscale test in the three schools as a whole is very suitable for use in classroom learning.

Based on a wide scale product trial the table, a comparison of pretest, posttest, and N-gain results in explanatory text writing skills, post scores from three schools were obtained 82.88 and then the average N-gain score was 0.37667. So The Effectiveness of the student worksheets product in this test is included in the medium category.

#### 4. CONCLUSION

Based on the research results that have described the development of student worksheets Writing Explanatory Texts Based on

Project Based Learning, it can be concluded as follows.

1. The process of developing students' work in writing explanatory texts based on learning-based projects starts from planning stage based on learning objectives to write explanatory texts, learning resources, determine the product of teaching materials, and the learning model used. do development do limited scale, wide scale trials, and revising the product. This Student Worksheet focuses more on the application of writing explanatory texts and the use of projectbased learning models that are adapted to the current pandemic conditions where the learning process is carried out online from home so that students can easily receive the material presented by the teacher.
2. Eligibility for the LKPD has been developed to meet the "highly relevant" criteria. The assessment is based on the assessment of one material expert, one learning expert, one practitioner, three Indonesian language teachers, and Class XI high school students from each school who are the object of the experiment. The material expert assessment based on all aspects assessed obtained a final score with a percentage of 82% declared "very relevant" based on the feasibility level table. The material expert's assessment of all aspects assessed obtained a final score with a percentage of 84% stated in

the "very relevant" category, and lastly, the assessment from practitioners from the whole obtained a final score of 85.71% stated "very relevant", the last three Indonesian language teachers from each school obtained a score of 88.33% with the category "very relevant" to be used in learning activities to write explanatory texts.

3. Based on the calculation of the results of the pretest, posttest and N-Gain, the effectiveness values of 0.38, 0.38, and 0.37 are included in the medium category. Thus, the product of the Student Worksheet in the form of Writing Explanatory Texts Based on Project Based Learning is effectively used in learning.

### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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