

Numeracy Literacy Skills of Grade XII Students of Sma Negeri 7 Manado Through Explanatory Texts Using the Project Based Learning Model

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ABSTRACT

This study was conducted at SMA Negeri 7 Manado with the aim of describing the literacy and numeracy skills of grade XII students through the application of the Project Based Learning (PBL) model in learning explanatory texts. The subjects of the study consisted of 24 students who took part in the learning process that began with orientation, motivation, and explanation of the material, followed by group discussions and presentations. The results of the analysis showed that students had good writing and reading skills, but still needed to improve their numeracy skills in the context of numeracy literacy. The results of the literacy and numeracy ability test showed an average student score of 70.33%, which was categorized as "quite capable". Of the 24 students involved, only 4 students reached the "very capable" category, while 3 students were in the "capable" category, 5 students were "quite capable", and 12 students were "less capable". These findings provide insight for teachers and schools to design more effective learning strategies in improving students' literacy and numeracy skills in the future.

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INTRODUCTION

Numeracy literacy is a fundamental skill that is very important in the world of education. This ability includes understanding, analyzing, and applying numerical data in various contexts, including in explanatory texts. In the Indonesian Language curriculum, numeracy literacy is taught through various types of texts, including explanatory texts that require students to interpret data-based information. Based on Permendikbud Number 37 of 2018, one of the basic competencies in learning Indonesian for grade XII is interpreting and compiling explanatory texts based on numerical data. However, in practice, many students have difficulty in connecting

numerical data with the content of the text they create. Therefore, an innovative learning model is needed to improve these skills.

Project Based Learning (PBL) is an approach that can help students understand and apply the concept of numeracy literacy in explanatory texts. This model provides a project-based learning experience that involves collecting, analyzing, and presenting data in the form of academic writing. Through PBL, students can learn more independently, collaboratively, and based on real experiences. This study aims to measure the effectiveness of the PBL model in improving the numeracy literacy skills of grade XII students of SMA Negeri 7 Manado. The results of the study are expected to provide recommendations for teachers in developing more effective learning strategies to improve students' numeracy literacy skills.

The researcher is very interested in conducting this research because there is a change in the learning process that makes students prefer to do more instant things by looking for other people's writing materials or ideas rather than compiling their own results. This can make students increasingly lazy in reading, writing and calculating. Students are no longer able to think critically so they cannot solve the problems they face. Based on the background above, the researcher formulated this research with the title "Literacy and Numeracy Skills of Class XII Students of SMA Negeri 7 Manado through Explanatory Texts using the Project Based Learning learning model".

METHOD

This study uses a descriptive analytical method to describe the numeracy literacy skills of grade XII students of SMA Negeri 7 Manado. The subjects of the study consisted of 24 students. Data collection techniques were carried out through observation, interviews, and written tests. The research instruments used included observation sheets to assess student involvement in project-based learning, interview guidelines to determine student and teacher perceptions of the PBL learning model, and numeracy literacy tests based on explanatory texts to measure students' understanding in integrating numerical data into text.

The data collection process was carried out in several stages. Observations were carried out during the learning activities, while interviews were conducted after students completed their projects. Tests were given at the end of the learning session to evaluate students' understanding of the material that had been taught. The data obtained were analyzed using a percentage technique based on Ali's formula (1978) to determine the category of student ability. The results of the data analysis were then classified based on the level of student achievement in numeracy literacy skills, ranging from the category of "very capable" to "less capable." By using this approach, the study can provide a clear picture of the effectiveness of the PBL model in improving students' numeracy literacy and identifying aspects that need to be improved in the learning process.

RESULT AND DISCUSSION

Description of Explanatory Text Learning using the Project Based Learning Model

This research was conducted at SMA Negeri 7 Manado in Tingkulu Village, Wanea District, Manado City, North Sulawesi Province. The class chosen by the researcher in data collection was class XII which consisted of 24 students consisting of 13 male students and 11 female students.

In accordance with the first objective of the study, namely to describe literacy and numeracy skills in explanatory texts obtained through written tests in the form of single multiple choice questions totaling 5 numbers and 2 essay numbers. Then the questions were given to students of class XII of SMA Negeri 7 Manado where previously the researcher provided direction and motivation for students to encourage them and then give appreciation. Before the researcher explained the material in more detail about the explanatory text, the researcher first gave questions to students related to the material, considering that the explanatory text is a text used to explain or present information about a phenomenon, process, or concept.

Description of Numeracy Literacy Data

According to the National Institute for Literacy, literacy itself is the ability of students to read, write, speak, calculate, and solve problems at the level of expertise required in work, family and society. These five abilities are used by many experts in assessing whether someone is literate or illiterate (Erlangga Book Focus on Minimum Competency Assessment (AKM) U/SMP/MTS. 2021).

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Table 1. Results of Teacher Assessment Analysis

MGK Students	
Writing Skills	Having the ability that is categorized as very good in think critically so as to obtain a score of 35 in literacy in writing explanatory texts and have achieved the specified score
Reading Ability	Have good reading comprehension skills so that he got a score of 28 in reading literacy questions in explanatory texts and almost reached the specified score
Ability	Have good problem solving skills
Count	so that he got a score of 27 in calculating ability about the explanatory text and almost reached the specified score
Teacher's Notes	Students have excellent critical thinking skills. However,
	We need to improve our understanding of reading materials and solving problems in numeracy literacy questions in explanatory texts.

NE Students	
Writing Skills	Having the ability that is categorized as very good in think critically so as to obtain a score of 35 in literacy in writing explanatory texts and have achieved the specified score
Reading Ability	Has the ability that is categorized as very good in understanding reading so that he gets a score of 30 in reading literacy questions in explanatory texts and has achieved a score that is determined
Counting Ability	Have good problem solving skills so as to obtain a score of 30 in calculating skills about the explanatory text and almost reached the specified score
Teacher's Notes	Students have excellent abilities in thinking critically and understanding reading material in numeracy literacy questions explanatory text. However,
	Need to be further improved in solving problems on numeracy questions in explanatory text

JS Students	
Writing Skills	Have excellent critical thinking skills so that he obtained a score of 35 in literacy in writing explanatory texts and had achieved the specified score.
Ability Read	Have good reading comprehension skills thus getting a score of 32 in reading internal literacy questions explanatory text and almost reached the specified score
Counting Ability	Have good problem solving skills so that he got a score of 29 in the calculation ability on the explanation text questions and almost reached the specified score
Teacher's Notes	Students are very good at thinking critically, understanding what read and solve problems in explanatory texts, however,
	Need to be further improved in solving problems in numeracy literacy questions in explanatory texts

Students' Numeracy Literacy Skills

Based on the results of the teacher assessment analysis to determine students' Numeracy Literacy abilities in solving problems, then calculated using the percentage formula, the results of the students' tests after being collected and checked are then analyzed in the following table.

Table 1. *Results of Literacy & Numeracy Ability Test in Explanatory Text of Grade XII Students of SMA Negeri 7 Manado using Learning Model Project Based Learning*

No	Respondent Name	Assessment/Score Aspects			Mark
		Write	Read	Count	
		35	30	35	
1	TKK	26	30	10	66
2	AM	27	20	20	67
3	AK	28	21	18	67
4	SW	32	22	18	72
5	KP	30	30	22	82
6	NM	22	22	18	62
7	FT	14	20	19	53
8	AN	35	20	17	72
9	APM	20	20	20	60
10	SO	15	21	19	55
11	KR	35	22	20	77
12	JT	35	25	20	80
13	KM	32	23	17	72
14	MGK	35	28	27	90
15	FSS	35	27	20	82
16	NE	35	30	30	95
17	OT	35	26	20	91
18	APK	30	10	9	49
19	JS	35	32	29	96
20	MLL	35	8	6	49
21	FS	35	18	9	62
22	SS	13	23	17	53
23	VLM	13	22	22	53
24	LIEL	35	23	21	79
Amount		687	553	448	1,688

Based on the data in the table above, it is formulated using the percentage formula put forward by Ali (1978:184), namely:

$$\% = \frac{n}{N} \times 100$$

N

Information

n = The grades obtained by all students

N = The sum of all expected values

% = Percentage

100

= Fixed
Numbe
rs
Known
:
n = 1688

N = 2400

$$\frac{\%}{2400} = 1688 \times 100 = 70.33\%$$

The results obtained by class XII students of SMA Negeri 7 Manado were 70.33% categorized as quite capable because they were in the range of 70%-79%.
Description of Assessment Aspects:

No	Assessment Aspects	Score	Category
1	Write	35	Enough
2	Read	30	Good
3	Count	35	Very good
Amount		100	

Based on the results of the analysis above, it can be seen that the literacy skills of numeracy in the explanatory text of class XII students of SMA N 7 Manado using the project based learning model that has obtained a score of 90% - 100% is 4 students, students who obtained a score of 80% - 89% are 3 students, students who obtained a score of 70% - 79% are 5 students and students who obtained a score of 0% - 69% are 12 people. While the results of literacy and numeracy in the expository text of all class XII students of SMA N 7 Manado using the project based learning model are 70.33% then Class XII students of SMA N 7 Manado were declared quite capable in numeracy literacy because they were in the range of 70% - 79%.

Discussion

Based on the results of the data analysis above, it can be stated that the numeracy literacy skills in the explanatory text material of class XII students of SMA N 7 Manado using the project based learning model are categorized as quite good. Although, there are some students who have lower literacy and numeracy skills compared to other students. For example, student 1 has the highest score in the writing and numeracy assessment aspects, but his reading score is lower than his writing and numeracy scores. Meanwhile, there are some students who have low scores in certain assessment aspects, such as student 18 and student 19 who have low scores in the writing and numeracy assessment aspects. However, overall, the literacy and numeracy skills of students of SMP Negeri 5 Bitung look quite good.

Based on the results of interviews with students in learning activities, where students are interested in expository text material, material that can increase knowledge. Students are very enthusiastic in participating in learning so that the results or values obtained are maximized as expected. Because the results obtained in

this study give a good impression to students. This positive impression was obtained from the opinions of several students regarding the use of the problem based learning model that students are given the opportunity to think, triggering their creativity to solve problems contained in the material to be studied. This is also a concern for principals and teachers, especially Indonesian language teachers where student success must also be prioritized by teaching professionally and creatively. Because with a good and creative teaching method from a teacher, of course, it will have a positive impact on student success in understanding the material.

Thus, this research, For schools: it is expected to provide additional training and resources for teachers in implementing the Project Based Learning (PBL) model effectively. This can help improve the quality of teaching and support the development of students' literacy and numeracy skills. In addition, schools also need to provide adequate facilities to support project-based learning activities, such as discussion rooms and access to the necessary technology. For teachers, it is expected to focus more on developing students' numeracy and problem-solving skills in learning. A more intensive approach to teaching numeracy can help students achieve better results. In addition, teachers also need to provide constructive feedback and facilitate more in-depth group discussions to improve students' critical thinking skills. For students, it is expected to actively participate in group discussions and projects given, as well as strive to improve their writing and problem-solving skills. They also need to practice reading explanatory texts more and practice critical thinking to achieve better scores in literacy and numeracy. Thus, students can be better prepared to face academic challenges in the future.

CONCLUSION

This study was conducted at SMA Negeri 7 Manado with the aim of evaluating the effectiveness of the Project Based Learning (PBL) model in enhancing students' literacy and numeracy competencies through explanatory text learning. A total of 24 twelfth-grade students participated in a structured learning process consisting of orientation, motivation, material explanation, group discussion, and presentations. Analysis revealed that while students demonstrated strong reading and writing abilities, their numeracy skills within the literacy framework remained an area for development. The assessment of literacy and numeracy skills showed an average score of 70.33%, placing the group in the "quite capable" category. Out of the 24 students, 4 were categorized as "very capable", 3 as "capable", 5 as "quite capable", and 12 as "less capable". These findings underscore the need for more targeted instructional strategies to effectively enhance both literacy and numeracy competencies among students in future educational practices.

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