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The Effect of Discovery Learning Model on Writing Ability of Descriptive Text at Grade XI SMAN 3 Tanjung Balai Academic Year 2025/2026

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Abstract: This study aims to examine the effect of Discovery Learning Model on students' ability in writing Descriptive Text. This research employed a quantitative approach with an experimental design. It was conducted at SMA Negeri 3 Tanjungbalai involving 64 eleventh-grade students as the sample, consisting of 32 students in the experimental group (XI-1) and 32 students in the control group (XI-2). The experimental group was taught using the Discovery Learning Model, while the control group received conventional teaching. The data were collected through pre-test and post-test.The findings showed that the mean score of the experimental group increased from 62.3 in the pre-test to 84.8 in the post-test, indicating an improvement of 22.5%. Meanwhile, the control group showed a lower improvement from 55.9 to 65.7, with an increase of 9.8%. Furthermore, the result of the t-test revealed that the t-observed value (18.8) was higher than the t-table value (2.00) at the significance level of 0.05 with 62 degrees of freedom. This indicates that the alternative hypothesis (Ha) is accepted and the null hypothesis (Ho) is rejected. In conclusion, the implementation of the Discovery Learning Model has a significant positive effect on students' ability in writing Descriptive Text.

INTRODUCTION

In this era, people are expected to speak a number of languages in this day and age. In everyday life, language is a vital tool for communication. We use language to communicate our ideas to the person we are speaking to. Every person has the ability to communicate their thoughts, feelings, interests, and viewpoints through language. It will be extremely difficult for us to comprehend what individuals are saying if there is no language (Kurniati, 2015) in (Awaliah & Rahmawati, 2024).

Human life revolves around language. One of the most significant means of expressing love or hate is through language. Humans utilize language to arrange their lives, communicate thoughts and feelings, and remember the past through written or spoken words. Some people are multilingual. The first step to communicating with others outside is to observe a foreign language

(Syandri, 2023). Through English, it is easier to communicate with strangers.

Often referred to as the global lingua franca, English is the primary language that connects people worldwide. In the domains of professional, technological, scientific, and international diplomacy. Many individuals have benefited greatly from English's ability to help them expand their knowledge and abilities in a variety of areas, including education, vacations, religion, technology, and the global economy. As a result, English has been made the first foreign language in Indonesia,a developing nation, and is now an obligatory subject in all formal education levels, from junior high to university.

In order to help students actively develop their potential for religious spiritual strength, self-control, personality, intelligence, and noble morals, as well as the skills they need for themselves and society, education is a thoughtful and planned initiative to create a learning environment and learning process. country, as well as the nation (Sanjaya, 2007) in (yohana sitohang, dian syahfitri, 2019). Education plays a very important role in preparing qualified human beings for the development of the State. Human beings will grow and develop as a whole person with education (Yohana Sitohang, Dian Syahfitri, 2019).

According to the Big Indonesian Dictionary (KBBI), The effect is the power that exists and arises from something (a person, an object) that helps shape a person's character, beliefs, or actions. From the definition above, it has been previously stated that effect is a power that can shape or change something else.

Learning is a process that a person goes through as a result of his efforts to acquire new experiences, information, and abilities through contact with his surroundings. The learning process culminates in learning outcomes. Dimyati (2013) in (Putri et al., 2017).

The learning process requires learning models. It is intended that by applying into practice an innovative learning model, a stimulating environment for learning will be created, increasing students' enthusiasm for the learning process and their ability to achieve better learning results. The Discovery Learning approach to education is one that helps enhance writing abilities.

The Discovery Learning Model is a learning model where students understand concepts, meanings, and relationships through an intuitive process to finally reach a conclusion. Sani (2014:97) in (Purwati, 2023) One argument is that students must use a succession of data or information to find concepts as part of a learning exercise known as "discovery learning." where students directly collect the data through experiments or observation. Discovery learning is also a learning strategy that tends to ask students to make observations, experiments, or scientific actions to get conclusions from the results of these scientific actions (Saifuddin, 2014:108) in (Kristin, 2016).

Through the stages of observation, questioning, trying, reasoning, and communicating, students can learn independently or in groups using the discovery learning model, which allows them to pursue their own interests in order to become competent and satisfy their curiosity (Yusnawarni, 2017) in (Ariyana, Enawar, dkk, 2020). In this model, teachers are only facilitators.

Writing is the ability to convey thoughts, ideas and information through written language. According to Rusyana (in Simarmata, 2019) in (Raissa et al., 2022) Writing is the ability to use language patterns that are poured into a piece of text that has a concept or meaning.

Descriptive text is one of the genre texts that presents the characteristics of something to make a clear impression about people, places, or things. A descriptive text is one that uses

discourse to present an item or topic of discussion in a way that makes the reader feel as though they are seeing it or that it is right in front of their eyes (Amrolani & Muslihah, n.d.). This is in line with the theory of Keraf (2000) in (Sobari & Husnussalam, 2019) It asserts that the author incorporates the meaning of the words we use into the written text when writing descriptively.

A descriptive discourse approach describes an object as though the reader were actually there (Suryati, 2019). Descriptive describes a person, sight, or sensation that has been experienced. An summary of an event or occurrence and problem is given by descriptive.

However, many of students also difficulty while writing descriptive writings using the discovery learning methodology. Students in grade XI SMA N 3 Tanjung Balai continue to receive poor outcomes from their English instruction, particularly when it comes to producing descriptive prose. So that many students do not understand the general structure and language features of descriptive text and also many students have difficulty in writing descriptive text duet o a lack of vocabulary. This is especially true when the discovery learning methodology is used. Less diverse and typically teacher-centered teaching strategies are frequently the cause of students' struggles while producing descriptive writings. Students who use traditional approaches become passive and less inclined to investigate concepts. Learning models must therefore be innovative in order to support student initiatives, activities, and autonomous concept discovery. The capacity to produce descriptive writings is said to be greatly enhanced by the use of Discovery Learning.

Based on the above description and problems, the author decided to choose the title "The Effect of Discovery Learning Model in Writing Ability of Descriptive Text At Grade XI SMA N 3 Tanjung Balai Academic Year 2025/2026"

RESEARCH METHOD

Place and Time of The Research

The location of the research was conducted in SMA N 3 Tanjung Balai. It is located on. Jl. Sman III, Gading, Kec. Datuk Bandar, Tanjung Balai City, North Sumatra, in the event semester in 2025/2026 Academic Year.

Population and Sample

Research Population

A population is a group of people, things, or other entities with particular traits that are the focus of study or observation, share those characteristics, and reside in a particular area and moment. Sugiyono (2019) in (Dinilhaq et al., 2025) A population is defined as a broad category made with items or persons with specific attributes and traits chosen by the researcher to be examined and from which conclusions are then generated. The population of this study is all grade XI students at SMA N 3 Tanjung Balai for the 2025/2026 Academic Year.

Research Sample

This study applies the use of simple random sampling. According to (Sugiyono, 2013) in (Dinilhaq et al., 2025) Simple random sampling is a method of drawing from a population or universe in such a way that each member has an equal opportunity to be selected or taken. Each member of the population has an equal chance of being selected at random. For example, from

200 eleventh-grade students, a researcher selects 50 students using a lottery or random number table. (Sugiyono, 2017) in (Dinilhaq et al., 2025). A method was used to calculate the number of grade XI students at SMA N 3 Tanjung Balai, which served as the sample for the research. The sample of the research was XI-1 and XI-2, where students of XI-1 are as the experimental class and students of XI-2 are as the control class.

Research Design

According to Moh Kasiram in (Djollong, 2014) Quantitative research is a method of knowledge discovery that employs numerical data as a means of analyzing information about our research questions. Research that uses a lot of numerical tools for gathering data in the field is known as quantitative research. This study combines a quantitative and experimental methodology. The experimental group and the control group were the two groups into which the sample was divided. This study consists of two groups and two variables. Conduct an initial test to assess students' ability to write descriptive texts. After the test is given, the final test is conducted to evaluate the student's score and descriptive text writing ability.

Data was collected to see a comparison of students' abilities before and after. This approach is appropriate to assess the impact of the Discovery Learning Model on the ability to write Descriptive Texts for grade XI students of SMA N 3 Tanjung Balai for the 2025/2026 Academic Year.

Table 1. Research Design

Group	Pre-Test	Treatment	Post-Test
E	Y1	X	Y2
C	Y1	-	Y2

Note:

E : Experimental

C :Control

Y1 : Pre-Test

Y2 : Post-Test

X : Treatment

The Instrument of Collecting Data

A research instrument is a tool that is used as a tool to measure a measurement object or collect data from a variable. An instrument is said to be good if it is valid and reliable. Djaali (2000: 9) in (Matondang, 2009) stated that in general, what is meant by an instrument is a tool that, because it meets academic requirements, can be used as a tool to measure a measurement object or collect data about a variable. Students' scores before and after studying the Discovery studying Model are determined in this study using a test tool. Students will be able to evaluate their skills after the test, regardless of whether they pass or fail. Although a low score suggests that the skill is still limited, a high score indicates that the exam was successfully passed.

Students are required to produce a descriptive essay both with and without Discovery Learning as part of the exam. Students' grades on this writing test are determined using assessment guidelines. According to Ari Julianto in (Glass 2005) stated that the assessment

guidelines use analytical methods and are chosen because they are very suitable for the class situation, have certain characteristics.

Table 2. Scoring Guide

No	Aspect	Score
1	**Step rhetoric**	
	Structured to maximize the descriptive text	20
	Minimal structured by type description	15
	Text selection is not clear	10
	Not best structured and elusive	5
2	**Grammar**	
	Right and proper	20
	Sometimes not quite right but does not effect the meaning	15
		10
	Less precise and effect the meaning	5
	Difficult to understand	
3	**Vocabulary**	
	Right and proper	20
	Sometimes not quite right but does not effect the meaning	15
		10
	Less precise and effect the meaning	5
	Difficult to understand	
4	**Clarify of Meaning**	
	Very clear and very effective	20
	Self-explanatory and effective	15
	Clear and ineffective	10
	Unclear	5
5	**The Relationship Between Ideas**	
	Very clear	20
	Quite clear	15
	Less clear	10
	Not clear	5

The Technique of Collecting Data

a. Pre-Test

Pre-test tests, which are performed before treatment. Essay tests were used by the researchers as pre-tests. Students in the experimental and control groups were required to write a response to a descriptive text. A pre-test was administered to the group in order to gauge the students' starting ability with developing descriptive language.

b. Treatment

The treatment was carried out after the pre-test. The experimental group was taught using the Discovery Learning Model approach supported by visual media such as pictures or videos. Meanwhile, the control group received conventional instruction, which mainly relied on teacher explanations without the use of multimedia. Although different teaching methods were applied, both groups were given the same topic and learning materials to ensure comparability.

c. Post Test

Post-tests are Following the treatment, a post-test was administered to evaluate students' writing ability. Similar to the pre-test, the post-test was conducted in essay form, where students were required to write a descriptive text based on a given topic about My School. The results of the post-test were then used to compare the writing performance of the experimental and control groups after receiving different instructional treatments.

RESULT AND DISCUSSION

Description of The Data

This research was conducted on 11 th February until 27 February 2026. The data was gathered by administering tests, which included a pre-test and post-test. The sample in this research was divided into two groups: experimental and control group. The same test was given to each group.

The research data was collected in order to determine whether the Discovery Learning Method had a significant impact on students' ability to write descriptive text. The data consist of the outcomes the Discovery Learning Model and Conventional Strategy. The research was carried out at SMA N 3 Tanjung Balai, grade XI. The sample consisted of XI-1 (32 students) as the experimental group and XI-2 (32 students) as the control group.

The Data of Experimental Group and Control Group

This table below showed the students score in pre-test and post-test in experimental group of XI-1 and the students score in pre-test and post-test in control group of XI-2.

Table 3. The Score of Student's Writing Descriptive Text of Pre-Test in Experimental Group

No	Student's Initial	Aspect					Total
		Step Rhetoric	Grammar	Vocabulary	Clarify of Meaning	The Relationship Between Ideas	
1	**AS**	15	10	10	10	15	60
2	**AR**	10	15	10	15	10	60
3	**AS**	10	10	15	10	10	55
4	**AA**	15	10	15	10	10	60
5	**AZ**	10	10	10	15	15	60
6	**AP**	15	15	10	15	10	65
7	**AFS**	15	15	15	10	10	65
8	**AM**	20	5	10	15	10	60
9	**DR**	20	15	15	10	10	70
10	**F**	15	10	15	15	10	65
11	**FN**	10	15	10	15	10	60
12	**MH**	15	15	10	10	15	65
13	**MHA**	10	10	15	15	10	60
14	**MRA**	10	10	15	10	10	55
15	**MR**	15	10	15	10	15	65

16	**MRL**	15	10	10	15	10	60
17	**MRL**	10	15	15	10	10	60
18	**MHA**	15	10	15	15	10	65
19	**MA**	15	15	10	15	15	70
20	**MY**	10	15	15	10	10	60
21	**MF**	15	15	10	15	10	65
22	**RF**	10	15	15	10	15	65
23	**RA**	15	15	10	10	10	60
24	**RD**	15	10	15	10	15	65
25	**SM**	10	15	10	10	15	60
26	**SH**	15	10	15	15	10	65
27	**S**	10	15	10	10	15	60
28	**SM**	15	10	15	10	10	60
29	**S**	15	15	15	15	10	70
30	**SD**	10	15	10	15	10	60
31	**S**	15	10	15	15	10	65
32	**SF**	10	15	15	10	10	60
Total		425	400	410	395	365	1995

Based on the assessment results presented in the table above, the Step Rhetoric aspect achieved a total score of 425. This indicates that the majority of students have begun to understand the organizational structure of descriptive writing, although the development of specific details within each structural component still requires further improvement. The Grammar aspect obtained a score of 400. This figure suggests that students still face significant obstacles in using correct grammatical rules, particularly in applying the Simple Present Tense, which is a fundamental characteristic of descriptive texts. Meanwhile, the Vocabulary aspect reached a score of 410, signifying that students possess a sufficient command of words to describe objects, though the variety of their word choices remains limited.

The Clarify of Meaning aspect received a score of 395. This shows that the messages students intended to convey in their writing are generally understandable, even though certain parts remain ambiguous. The lowest score was recorded in the aspect of The Relationship Between Ideas, with a total of 365. This score indicates that coherence and unity between sentences and paragraphs remain the primary difficulties for students, as the transition of ideas between different parts of the text often feels disjointed. Overall, the students' ability to write descriptive texts in this pre-test phase is still categorized as needing further development. Intensive improvement is highly required across almost all aspects, particularly in establishing the connection between ideas and achieving more accurate grammatical understanding.

Table 4. The Score of Student's Writing Descriptive Text of Post-Test in Experimental Group

No	**Student's Initial**	**Aspect**					**Total**
		Step Rhetoric	**Grammar**	**Vocabulary**	**Clarify of Meaning**	**The Relationship Between Ideas**	
1	**AS**	15	15	15	20	15	80
2	**AR**	20	15	15	15	20	85

3	**AS**	15	20	15	20	15	85
4	**AA**	15	15	15	15	15	75
5	**AZ**	20	20	15	15	20	90
6	**AP**	15	15	20	15	15	80
7	**AFS**	15	20	15	15	15	80
8	**AM**	15	15	10	15	15	70
9	**DR**	20	15	20	15	20	90
10	**F**	15	15	20	15	20	85
11	**FN**	20	20	20	15	20	95
12	**MH**	15	15	20	15	15	80
13	**MHA**	20	15	15	20	20	90
14	**MRA**	20	20	15	20	20	95
15	**MR**	15	15	15	20	15	80
16	**MRL**	20	15	15	20	15	85
17	**MRL**	15	20	15	15	20	85
18	**MHA**	20	20	15	15	20	90
19	**MA**	15	15	20	15	15	80
20	**MY**	20	15	20	20	20	95
21	**MF**	15	20	20	15	15	85
22	**RF**	20	20	15	20	20	95
23	**RA**	20	15	20	15	15	85
24	**RD**	20	15	15	20	20	90
25	**SM**	15	15	15	15	15	75
26	**SH**	15	15	20	15	15	80
27	**S**	20	15	15	15	20	85
28	**SM**	15	15	15	15	15	75
29	**S**	20	20	15	15	20	90
30	**SD**	15	20	15	15	15	80
31	**S**	20	20	20	15	20	95
32	**SF**	20	15	15	20	15	85
Total		560	540	530	530	555	2715

Based on the post-test results of students' descriptive writing skills in the experimental group, all assessment aspects showed significant improvement. Step rhetoric Aspect: A total score of 560 was obtained. This indicates that students were able to structure descriptive texts in a correct and logical order. Grammar Aspect: A total score of 540 was obtained, indicating that students' understanding of grammatical rules in describing something had significantly improved. Vocabulary Aspect: A total score of 530 was obtained. This score indicates that students are beginning to use a richer and more targeted variety of words when describing objects. Clarify of Meaning Aspect: A total score of 530 was obtained, indicating that the message or description students intended to convey can be clearly understood by the reader without causing ambiguity. The Relationship Between Ideas Aspect: Achieved the highest score, namely 555. This shows that students are very good at connecting one sentence to another so that the text becomes coherent and flows naturally. Overall, the total score collected from all students was 2715. The descriptive text writing ability of students in this experimental group can be categorized at the Very Good level, with even progress in each assessment criteria compared to the previous pre-test results.

Table 5. The Score of Pre-test and Post-test of Experimental Group

No.	Student's Initial	Score of Pre-Test	Score of Post-Test	X2	Y2	XY
1	**AS**	60	80	3600	6400	4800
2	**AR**	60	85	3600	7225	5100
3	**AS**	55	85	3025	7225	4675
4	**AA**	60	75	3600	5625	4500
5	**AZ**	60	90	3600	8100	5400
6	**AP**	65	80	4225	6400	5200
7	**AFS**	65	80	4225	6400	5200
8	**AM**	60	70	3600	4900	4200
9	**DR**	70	90	4900	8100	6300
10	**F**	65	85	4225	7225	5525
11	**FN**	60	95	3600	9025	5700
12	**MH**	65	80	4225	6400	5200
13	**MHA**	60	90	3600	8100	5400
14	**MRA**	55	95	3025	9025	5225
15	**MR**	65	80	4225	6400	5200
16	**MRL**	60	85	3600	7225	5100
17	**MRL**	60	85	3600	7225	5100
18	**MHA**	65	90	4225	8100	5850
19	**MA**	70	80	4900	6400	5600
20	**MY**	60	95	3600	9025	5700
21	**MF**	65	85	4225	7225	5525
22	**RF**	65	95	4225	9025	6175
23	**RA**	60	85	3600	7225	5100
24	**RD**	65	90	4225	8100	5850
25	**SM**	60	75	3600	5625	4500
26	**SH**	65	80	4225	6400	5200
27	**S**	60	85	3600	7225	5100
28	**SM**	60	75	3600	5625	4500
29	**S**	70	90	4900	8100	6300
30	**SD**	60	80	3600	6400	4800
31	**S**	65	95	4225	9025	6175
32	**SF**	60	85	3600	7225	5100
	TOTAL	$\sum X = 1995$	$\sum Y = 2715$	$\sum X^2 = 124825$	$\sum Y^2 = 231725$	$\sum XY = 169300$

Based on Table 3, it is clear that the distribution of pre-test and post-test scores of students in the experimental group shows quite significant variations, ranging from the highest to the lowest range of scores. In the pre-test, the highest score achieved by students was 70,

achieved by 3 students. Furthermore, there were 11 students who obtained a score of 65. The largest concentration of students was at a score of 60, where 16 students achieved that score. Meanwhile, the lowest score in this pre-test stage was 55, achieved by 2 students. In general, the pre-test data reflects that the initial abilities of most students were still in the middle to lower range before being given treatment.

Turning to the post-test results, there was a shift in scores towards a more positive direction. The highest score experienced a significant increase to 95, which was achieved by 5 students. This increase was followed by 6 students who scored 90. The majority of students in this group, namely 9 people, managed to achieve a score of 85, followed by 8 other students who scored 80. In addition, there were 3 students who scored 75, and only 1 student received the lowest score at this stage, namely 70. Overall, these results indicate that most students experienced a fairly drastic increase in performance and were able to achieve a higher score range compared to previous results.

Based on the table above, it showed that :

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

$$M = \frac{1995}{32} = 62{,}3$$

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

$$M = \frac{2715}{32} = 84{,}8$$

From the data above, it showed that student's score in pre-test was lower than post-test. The mean of student's score in pre-test was 62,3. After giving treatment of Discovery Learning Model, it was increased 22,5% and the score mean was being 84,8 in post-test.

Table 6. The Score of Student's Writing Descriptive Text of Pre-Test in Control Group

No	Student's Initial	Aspect					Total
		Step Rhetoric	Grammar	Vocabulary	Clarify of Meaning	The Relationship Between Ideas	
1	**AT**	15	10	10	15	10	60
2	**AM**	10	10	15	10	10	55
3	**AP**	15	10	5	10	10	50
4	**AR**	15	15	10	15	10	65
5	**A**	15	10	10	10	15	60
6	**M**	5	10	10	10	5	40
7	**CK**	15	15	15	10	15	70
8	**DK**	10	10	15	10	10	55
9	**DA**	10	15	10	10	10	55
10	**FGH**	10	5	10	5	10	40
11	**MDR**	15	10	15	15	10	65
12	**MFI**	10	10	10	10	10	50
13	**IDA**	15	15	10	10	15	65

14	**ISL**	15	5	15	10	10	55
15	**IRB**	15	10	10	15	10	60
16	**IA**	10	10	10	10	10	50
17	**KR**	10	15	10	10	10	55
18	**LA**	15	10	10	10	10	55
19	**MAH**	15	10	5	10	10	50
20	**MD**	15	15	10	15	10	65
21	**NAA**	15	15	5	10	10	55
22	**NRZ**	10	15	10	10	10	55
23	**PR**	15	10	10	15	10	60
24	**RA**	15	10	10	15	5	55
25	**RR**	10	10	10	10	10	50
26	**S**	10	15	10	10	10	55
27	**SR**	15	10	10	15	10	60
28	**T**	10	10	15	10	10	55
29	**TS**	15	15	10	10	15	65
30	**TAD**	15	5	10	15	10	55
31	**Y**	15	10	5	10	10	50
32	**YNN**	10	10	15	10	10	55
Total		410	355	335	360	330	1790

Based on the pre-test results of the descriptive text writing skills of students in the control group, the Step Rhetorical aspect obtained a total score of 410, indicating that students were generally able to structure descriptive texts, although the development of details in the descriptions still needed to be strengthened. The Grammar aspect obtained a score of 355, indicating that grammar use remains a major obstacle for students, particularly in the application of the simple present tense and subject-verb agreement. Meanwhile, the Vocabulary aspect obtained a score of 335, indicating that students have sufficient vocabulary, resulting in word choice that tends to be repetitive and lacking in variety. The Clarify of Meaning aspect achieved a score of 360, indicating that the message conveyed in students' writing was quite understandable, but there were still some unclear or ambiguous sections. Finally, the Relationship Between Ideas aspect received the lowest score of 330, indicating that the coherence and relationships between ideas in the paragraphs were still weak, resulting in a lack of cohesion in the writing. Overall, students' writing skills still require improvement in all aspects, particularly in establishing connections between ideas and enriching understanding.

Table 7. The Score of Student's Writing Descriptive Text of Post-Test in Control Group

No	**Student's Initial**	**Aspect**					**Total**
		Step Rhetoric	**Grammar**	**Vocabulary**	**Clarify of Meaning**	**The Relationship Between Ideas**	
1	**AT**	15	15	15	15	10	70
2	**AM**	15	10	10	15	15	65
3	**AP**	15	10	15	10	10	60
4	**AR**	15	15	10	15	15	70
5	**A**	15	15	15	15	15	75

6	**M**	10	10	15	10	10	55
7	**CK**	15	10	15	15	15	70
8	**DK**	10	15	10	15	10	60
9	**DA**	15	15	10	15	15	70
10	**FGH**	15	10	10	10	10	55
11	**MDR**	15	15	10	15	15	70
12	**MFI**	10	15	15	10	10	60
13	**IDA**	15	15	15	15	15	75
14	**ISL**	15	10	15	15	10	65
15	**IRB**	15	10	15	15	10	65
16	**IA**	10	15	15	15	15	70
17	**KR**	15	10	15	15	10	65
18	**LA**	10	15	10	10	15	60
19	**MAH**	15	20	10	10	10	65
20	**MD**	15	15	15	10	15	70
21	**NAA**	15	15	10	15	10	65
22	**NRZ**	15	15	15	10	15	70
23	**PR**	10	20	15	15	15	75
24	**RA**	15	15	10	10	10	60
25	**RR**	15	10	15	15	10	65
26	**S**	15	15	10	15	15	70
27	**SR**	15	10	15	15	10	65
28	**T**	10	15	10	10	15	60
29	**TS**	20	15	15	10	15	75
30	**TAD**	15	20	5	15	5	60
31	**Y**	10	15	15	10	10	60
32	**YNN**	15	10	15	15	10	65
Total		445	440	410	420	390	2105

Based on the post-test results of students' descriptive text writing in the control group, overall performance showed certain achievements in several assessment aspects. The Rhetorical Steps aspect obtained a total score of 445, indicating that most students were quite capable of constructing descriptive text structures well. The Grammar aspect achieved a score of 440, indicating that students had a basic understanding of the use of sentence structures, although variations in individual scores indicated diverse abilities. Meanwhile, the Vocabulary aspect obtained a score of 410, indicating that students' word choice still needs to be improved to provide more variety in describing something. The Clarify of Meaning aspect obtained a score of 420, indicating that the message or description conveyed by students is already quite understandable by the reader. Finally, the Relationship Between Ideas aspect obtained the lowest score of 390, indicating that coherence between sentences and idea transitions are still the main difficulties for students. Overall, the highest student assessments were in the rhetoric step aspect 445, grammar 440, clarifying meaning 420, vocabulary 410, and the lowest student assessment in the post-test was in the relationship between ideas aspect 390.

Table 8. The Score of Pre-test and Post-test of Control Group

No	Student's Initial	Sore of Pre-Test	Score of Post-Test	X2	Y2	XY

1	**AT**	60	70	3600	4900	4200
2	**AM**	55	65	3025	4225	3575
3	**AP**	50	60	2500	3600	3000
4	**AR**	65	70	4225	4900	4550
5	**A**	60	75	3600	5625	4500
6	**M**	40	55	1600	3025	2200
7	**CK**	70	70	4900	4900	4900
8	**DK**	55	60	3025	3600	3300
9	**DA**	55	70	3025	4900	3850
10	**FGH**	40	55	1600	3025	2200
11	**MDR**	65	70	4225	4900	4550
12	**MFI**	50	60	2500	3600	3000
13	**IDA**	65	75	4225	5625	4875
14	**ISL**	55	65	3025	4225	3575
15	**IRB**	60	65	3600	4225	3900
16	**IA**	50	70	2500	4900	3500
17	**KR**	55	65	3025	4225	3575
18	**LA**	55	60	3025	3600	3300
19	**MAH**	50	65	2500	4225	3250
20	**MD**	65	70	4225	4900	4550
21	**NAA**	55	65	3025	4225	3575
22	**NRZ**	55	70	3025	4900	3850
23	**PR**	60	75	3600	5625	4500
24	**RA**	55	60	3025	3600	3300
25	**RR**	50	65	2500	4225	3250
26	**S**	55	70	3025	4900	3850
27	**SR**	60	65	3600	4225	3900
28	**T**	55	60	3025	3600	3300
29	**TS**	65	75	4225	5625	4875
30	**TAD**	55	60	3025	3600	3300
31	**Y**	50	60	2500	3600	3000
32	**YNN**	55	65	3025	4225	3575
	TOTAL	$\sum X$ **= 1790**	$\sum Y$ **= 2105**	$\sum X^2$ **= 101550**	$\sum Y^2$ **= 139475**	$\sum XY$ **= 118625**

Based on Table 8, can be seen that the distribution of pre-test and post-test scores for students in the control group varied from highest to lowest. In the pre-test, the highest score, 70, was achieved by one student, followed by a score of 65 obtained by five students. Five students scored 60, and 13 students scored 55. Furthermore, six students scored 50, while two students scored the lowest, 40. Overall, most students' pre-test scores were concentrated in the mid-range.

In the post-test, the highest score, 75, was achieved by four students, followed by nine students who scored 70. Nine students achieved a score of 65 and eight students achieved a score of 60. Two students achieved a score of 55, and the lowest score, 50, was achieved by zero students (no other students scored below 55). Overall, most students' scores on the post-test improved and were concentrated in the 65 to 70 range.

Based on the table above, it showed that :

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

$$M = \frac{1790}{32} = 55{,}9$$

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

$$M = \frac{2105}{32} = 65{,}7$$

From the data above,it showed that student's score in pre-test was lower than post-test. The mean of student's score in pre-test was 55,9. After giving treatment by using conventional learning, it just increased 9,8% and the score mean was being 65,7 in post-test.

Analyzing the Data by Using T-Test Formula

From the data result above of the lest as presented the test calculation is applied to figure out wether the use of Discovery Learning Model has significant effect in writing descriptive text at grade XI of SMA N 3 Tanjung balai. The formula of t-test performed as follows :

$$t = \frac{Mx - My}{\sqrt{\left[\frac{X_2 + Y_2}{N_x + N_y - 2}\right] + \left[\frac{1}{N_x} + \frac{1}{N_y}\right]}}$$

Before calculating the data using t-test formula, the research has find the mean and standart deviation of each group.

Mean and Standart Deviation of Experimental Group

To calculate the data by using t-test formula, this research has to determine the mean and standart deviation of experimental group :

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

$$M = \frac{1995}{32} =$$

$$M = 62{,}3$$

$$SDx = \sqrt{\frac{\sum X^2}{N}}$$

$$SDx = \sqrt{\frac{124825}{32}} = SDx = 62{,}4$$

Mean and Standart Deviation of Control Group

To calculate the data by using t-test formula, this research has to determine the mean and standart deviation of control group :

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

$$M = \frac{1790}{32} =$$

$$M = 55{,}9$$

$$SDx = \sqrt{\frac{\sum X^2}{N}}$$

$$SDx = \sqrt{\frac{101550}{32}} = SDx = 56,3$$

After getting mean and standart deviation of each group, then analyzing the data by using t-test formula :

$$t = \frac{Mx - My}{\sqrt{\left[\frac{X_2 + Y_2}{N_x + N_{y-2}}\right] + \left[\frac{1}{Nx} + \frac{1}{Ny}\right]}}$$

$$t = \frac{62.3 - 55,9}{\sqrt{\left[\frac{62,4+56,3}{32+32-2}\right]\ \left[\frac{1}{32} + \frac{1}{32}\right]}}$$

$$t = \frac{6,4}{\sqrt{\left[\frac{118,7}{62} + \frac{2}{32}\right]}}$$

$$t = \frac{6,4}{\sqrt{1,91 \text{ x } 0,0625}}$$

$$t = \frac{6,4}{\sqrt{0,119}} = \frac{6,4}{0,34} = 18,8$$

So, t-test or *t- counting* = 18,8

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

$$N_1 + N_2 - 2$$

DF = 32 + 32 -2

DF = 62

From the table

Df 60 = 2,00

Df 62 = …….?

Df 70 = 1,99

Df 62 is not shown in the list of t – table. So to find out df 62 is.

Df = $\frac{62-60}{70-60}$ X (1,99 – 2,00)

Df = $\frac{2}{10}$ X (-0,01)

Df = 0,2 x -0,01

Df = -0,002

Then, Df 62 can be found as follow :

Df 62 = Df 60 + (-0,002)

Df 62 = 2,00 + (-0,002)

Df 62 = 1,998 = 2,00

So, distribution of table 62 = 2,00

Testing Hypothesis

Testing hypothesis is a method in statistics used to make mathematical predictions or draw conclusions about a situation or population based on sample data. This procedure is used to determine whether observed results are statistically significant or simply due to chance.

For this purpose, this research formulated hypothesis about a particular situation and then apply various statically testing techniques like Z test, T test, Chi-square test and etc, to test the hypothesis. And on the basis of these tests this research concluded about accepting or rejecting the formulated hypothesis.

The basis of testing the hypothesis was Ha. Ha was accepted if T-test > T table and Ho was accepted if T-test T-table. In this research, the calculation of the scores by using T test for the degree of freedom (df) 62 at level of significance 0,05 where the T - critical value is = 2,00.

The result of computing the T – test shown that T – test is higher than T – table or it can be T – test > T – table (0,05) with df 62 or 18,8 > 2,00 (0,05) with df 62.

Thus, this study shows that Ha is accepted. This proves that the use of the Discovery Learning Method is effective in improving the ability to write descriptive texts, because students who use the Discovery Learning Model get higher scores than students who do not use the Discovery Learning Model.

Discussion

Based on table 5 to 7 above, so it was analysed the differences score between score pre-test and post-test in experimental and control group.

Table 9. The Differences Score Between Pre-Test and Post-Test of Experimental Group

No.	Student's Initial	Score of Pre-Test	Score of Post-Test	Y-X
1	**AS**	60	80	20
2	**AR**	60	85	25
3	**AS**	55	85	30
4	**AA**	60	75	15
5	**AZ**	60	90	30
6	**AP**	65	80	15
7	**AFS**	65	80	15
8	**AM**	60	70	10
9	**DR**	70	90	20
10	**F**	65	85	20
11	**FN**	60	95	35
12	**MH**	65	80	15
13	**MHA**	60	90	30
14	**MRA**	55	95	40
15	**MR**	65	80	15

16	**MRL**	60	85	25
17	**MRL**	60	85	25
18	**MHA**	65	90	25
19	**MA**	70	80	10
20	**MY**	60	95	35
21	**MF**	65	85	20
22	**RF**	65	95	30
23	**RA**	60	85	25
24	**RD**	65	90	25
25	**SM**	60	75	15
26	**SH**	65	80	15
27	**S**	60	85	25
28	**SM**	60	75	15
29	**S**	70	90	20
30	**SD**	60	80	20
31	**S**	65	95	30
32	**SF**	60	85	25
	TOTAL	$\sum X$ **= 1995**	$\sum Y$ **= 2715**	$\sum Y - X$ **= 720**

Based on the results of the data analysis that have been presented previously, it is clear that there is a significant increase in the students' post-test scores compared to their pre-test scores. This indicates that the application of the Discovery Learning method has proven to be very effective in improving students' abilities, and has a significant influence on students' writing on descriptive text learning materials. Furthermore, it was found that the mean difference between the experimental group at the pre-test and post-test stages reached 720. This strengthens the conclusion that the Discovery Learning method has a positive influence and a real impact on the development of students' writing skills on descriptive text learning materials.

Table 10. The Differences Score Between Pre-Test and Post-Test of Control Group

No	Student's Initial	Sore of Pre-Test	Score of Post-Test	Y-X
1	**AT**	60	70	10
2	**AM**	55	65	10
3	**AP**	50	60	10
4	**AR**	65	70	5
5	**A**	60	75	15
6	**M**	40	55	15
7	**CK**	70	70	0
8	**DK**	55	60	5
9	**DA**	55	70	15
10	**FGH**	40	55	15
11	**MDR**	65	70	5
12	**MFI**	50	60	10
13	**IDA**	65	75	10
14	**ISL**	55	65	10

15	**IRB**	60	65	5
16	**IA**	50	70	20
17	**KR**	55	65	10
18	**LA**	55	60	5
19	**MAH**	50	65	15
20	**MD**	65	70	5
21	**NAA**	55	65	10
22	**NRZ**	55	70	15
23	**PR**	60	75	15
24	**RA**	55	60	5
25	**RR**	50	65	15
26	**S**	55	70	15
27	**SR**	60	65	5
28	**T**	55	60	5
29	**TS**	65	75	10
30	**TAD**	55	60	5
31	**Y**	50	60	10
32	**YNN**	55	65	10
	TOTAL	$\sum X$ **= 1790**	$\sum Y$ **= 2105**	$\sum Y - X$ **= 315**

Based on the analysis above, it can be seen that the student's score in the post-test is higher than pre-test. But there is no significant effect to the student's score. Meanwhile, the mean of differences score between pre-test and post-test experimental group is 315.

After the research data was included the score of experimental group was higher than control group, 90% students have ability to write descriptive text. Where the mean of experimental student's score was 62,3 in pre-test. After giving treatment of Discovery Learning Model, it was increased 22,5% and the mean score was being 84,8 in post-test. While the mean of control student's score was 55,9 in pre-test. After giving treatment by using conventional learning, it was just increased 9,8% and the mean score was being 65,7 in post test. This means that there is a significant difference in the value of student learning outcomes between classes that apply the Discovery Learning Model and those that do not apply the Discovery Learning Model learning model. So, the Discovery Learning Model is effective and significant for the ability to write english descriptive text material. Discovery Learning Model is one of the learning methods used to improve students' writing ability. The Discovery Learning Model is included in the cooperative learning method. Which in this learning model are led to learn from problems that often occur in everyday life so that students can easily apply this learning model.

The data was analyzed by the used t-test formula. The result of the analysis showed that t-score is higher that t-table (18,8 > 2,00) at the level of significance 0.05 with the degree of freedom 62. It means that the Ha is accepted and Ho is rejected.

CONCLUSION

From the results of the data analysis and discussion presented in the previous chapters, the researcher draws the following conclusions :

1. The use of the Discovery Learning model has a significant effect on the descriptive text writing ability of grade XI students at SMA N 3 Tanjung Balai for the 2025/2026 Academic Year.
2. There was a substantial increase in the students' writing performance in the experimental group, where the mean score rose from 62.3 in the pre-test to 84.8 in the post-test (an increase of 22.5%). In contrast, the control group taught using conventional methods only saw an increase of 9.8%.
3. The results of the hypothesis testing showed that the t_{observed} value was higher than the t_{table} (18.8 > 2.00) at a significance level of 0.05. This indicates that the alternative hypothesis (H_a) is accepted, proving that the Discovery Learning model is effective in improving students' writing achievement.
4. The Discovery Learning model is proven to be effective because it encourages students to be more proactive and independent, allowing them to discover concepts and understand the generic structure and language features of descriptive texts through their own intuition and problem-solving processes.

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