

The Effect of Implementing Discovery Learning on Students' Writing Ability

Marceli widia astuti¹⁾ *, Sumartono²⁾ *, Fajar Prihatini³⁾

^{1,2,3} Program Studi Ilmu Pendidikan Bahasa Inggris, Universitas Pancasakti Tegal. Jalan Halmahera Km. 1, Kota Tegal, Jawa Tengah, 53121 Indonesia.

* Korespondensi Penulis. E-mail: vitaidea859799@gmail.com, Telp: +628232457072

Abstract

The objectives of this study are 1) To find out the effect of implementing discovery learning on students' writing ability. 2) To find out the significant difference between students' writing abilities before and after being taught using Discovery Learning Model. The research methodology used pre-experimental with one-group pretest-post-test design. The hypothesis of this research is that there is any significant effect of implementing Discovery Learning on students' writing ability. The results of the test revealed that the experimental group had improved their writing ability. The pretest mean score indicated that students' ability in writing Procedure text before using Discovery Learning Model was 59.88. After implementing Discovery Learning Model, there was a noticeable effect, as it is indicated by the post-test mean score 82.67. The discovery learning model is very influential on student learning, in this case the teachers are suggested to incorporate the discovery learning model into their writing class. For further researchers, they can apply and develop the discovery learning model, especially to improve students' learning and problem solving abilities in writing Procedure text.

Keywords: Writing Ability, Discovery Learning.

1. INTRODUCTION

According to Abbas (2006) writing is the ability to communicate ideas, opinions, and feelings to others through written language. Accuracy in expressing concepts must be supported by proper use of language, including vocabulary, grammar, and spelling: Vocabulary is a set of words, typically the set in a language or the set known to an individual. Grammar explains the forms and structure of words (called morphology) and how they are arranged in sentences (called syntax). In other words, grammar provides the rules for common use of both spoken and written language, so we can more easily understand each other. And spelling is. The availability of spell checkers in word processing programs greatly reduces the likelihood of spelling errors – except for homonyms. A homonym is a word that is pronounced the same as another, but is spelled differently and has a different meaning.

There are many complaints about the teacher's ability to apply the right approaches, methods, and strategies in the learning process. That's why students' interest in learning English is still low. Therefore, mastering learning methods is highly recommended by all teachers. Nababan (1991) observes, that a qualified teacher is one who can match the teaching approach or technique best to the subject. Compared to other skills, writing skills rarely receive special attention in the learning process. For example, students are more often asked to read certain texts and answer questions than taught to write essays. There are many ways and methods for discovering and learning writing abilities. One of the methods that the author will use in this study is discovery-learning writing ability. According to Tok & Kandemir (2015) keep in mind that the study's findings show that doing creative writing exercises helps students write in English more successfully.

The application of the Discovery Learning Model is a solution to improve the quality of learning to write procedural texts. Discovery learning is a learning model, and it is a learning concept that aims to understand meaning and relationships through an intuitive process so that, in the end, they arrive at a conclusion. Discovery learning includes learning models that use understanding, understanding concepts, then learning meaning and a relationship through an intuitive process until finally arriving at a conclusion. In the Discovery

Learning model there are steps: giving a stimulus (stimulation), a statement or identification of a problem late (problem statement), the collection of data that is found (datacollection), data processing from the results of data collection (data processing), Verification (verification) and Drawing a Conclusion or Generalization (generalization). So that students are more creative and innovative in all areas of learning, A teacher must be involved in helping his students develop the seven writing skills, and that will happen when an individual is directly involved in using a process to discover various principles and concepts to develop students' abilities. The discovery of a learning model can be made through observation, prediction, measurement, classification, determination, and inference. A cognitive process itself is a mental process of assimilating concepts and principles in the mind. Rahayu & Mustika (2021).

Based on the observation in SMK Bhakti Praja Margasari, the author found that many students in the school had some difficulties in learning English, especially in Writing. Such as lack of motivation to learn writing and boring teaching techniques of teachers. Although students were taught at school to write, however, they still find it difficult to write. Therefore, teachers need to find appropriate techniques and media to help students understand their writing lessons. English is very useful for any education. English has a very important role in the world of education to digest and expand science, technology, and culture. Learning English in Indonesia emphasizes reading, listening, speaking, and writing. Writing is the skill that students create from their minds in real-life feelings. The capacity to write well is a crucial component of language proficiency, particularly in terms of productive language abilities.

According to Klimova (2011) writing occupies a unique position in the field of language education, because it is the only one of the four language skills-speaking, listening, and reading, that necessitates practise and mastery before it can be accomplished. It is anticipated that students will acquire proficiency in written communication in order to clarify their thoughts. Language proficiency is a crucial talent that holds significant importance as it is evaluated in standardized exams, primarily aimed at evaluating students' academic progress in terms of their knowledge and writing abilities Harmer, (2004). Therefore, writing, as a productive

ability, can be defined as a pivotal role in the process of acquiring a language.

From the problems above, the researcher was take a study entitled "The effect of implementing Discovery Learning on students' writing ability (an experimental research of the grade X at SMK Bhakti Praja Margasari.". The author is interested in knowing the impact of using the discovery learning model in teaching writing to class X students of SMK Bhakti Praja Margasari in the academic year 2023/2024.

2. LITERATURE REVIEW

Writing is an activity for communication. It means, we all consider that writing is an instrument to record ideas, or event, because with writing, someone can tell their opinion , behaviour, and feeling to others in written form. In addition, it can be also used to convey information Sumartono (2019). Knowing that writing skills are very important, it is a must for teachers to teach those skills in high school. In fact, it might also strengthen one's knowledge of the structure of grammar and choice of words. It makes students practice to express their ideas in written form. The ability to write has become a necessary ability in the global literacy community. Most importantly, the teacher must motivate students to write and encourage them to write more. As long as students want to write, their writing skills will increase. Prihatini et al., (2019).

The Process of Writing

Writing is not an instant process. This takes time and requires a lot of activity. Activities include prewriting, drafting, revising, and editing. In the process of writing, the author does not simply go step by step. Sometimes writers need to double-check before moving on to the next process, or sometimes they need to take a step back when they have an idea they want to add to their writing. Clouse (2012).

Types of Writing.

There are several types of writing in a class or lesson. There are five categories. Here's what the writing looks like:

1. Imitate or write

There are several simple exercises that can help students learn basic writing skills. When students write text, they will be able to perform simple skills for writing letters, punctuation, and short sentences. One possible activity in this type of writing performance is for students to write their

own work. They used product writing as a sample assignment to assess their basic writing ability.

2. Intensive or controlled

This is a type of task that requires students to develop appropriate vocabulary, idioms and idioms for a specific situation, as well as the correct grammatical features in sentences. Students using this performance style can engage in another exciting creative activity by rewriting passages from reading memory, even though their creativity is limited.

3. Self-Writing

Students in this category are free to write whatever they want. This set of measures requires attention. write diary.

4. Display writing

Show writing is definitely helpful for learning. Exhibited writing includes writing assignments, short answer essays, and other types of writing under test conditions. Invite students to write for teacher assignments or complete class assignments in such activities.

5. Factual Writing

Practical writing is a form of writing in which readers ask questions and actually seek information from the author. Writing letters, filling out forms, and sending simple messages are all examples of real text.

Every new writer starts with the simple activity of imitating writing. In this type of activity, students create simple letters, phrases, and sentences. Intensive reading or formal writing is the next level of writing. This activity focuses on grammar, vocabulary, or sentence structure rather than conveying meaning. The following levels are more difficult to complete because they allow students to create their own writing products, such as paragraphs or multi-page manuscripts, which require more advanced skills than before.

Teaching Writing

Teaching listening is an active process receiving and responding where the teacher acts as a speaker and students as listeners in the learning process that is delivered. Listening is considered a very important skill in foreign language classes, whether student want to participate in verbal, interpersonal communication, or students who want to receive certain information. Suryanto (2019) states that the teacher should look for the simplest listening teaching method to overcome his difficulties to teach effectively and to achieve the objectives of teaching listening successfully, such as teaching

students to acquire vocabulary, grammar understanding, and good pronunciation .

In this activity the teachers have a very important role, the language teacher is recommended to show students how they can adjust their listening activities to meet various situation, types of input their listening activities to meet various situations, types of input, and listening goal. The teacher is also tasked by helping students develop listening strategies and match appropriate strategies for each listening situation, in addition, as language teachers, it is important to consider how to integrate listening into teaching and ensure that our students have the opportunity to listen inside and outside the classroom.

The Definition Discovery Learning

According to Hosnan (2014) Discovery learning is a model that develops active learning for students through self-discovery and research. By discovering patterns, the results obtained by students will remain faithfully and long-term in their memory and will not be easily forgotten. Students can also learn to analyze and think and try to solve their own problems.

Steps of Discovery Learning

According to Hosnan (2014) there are several steps that must be taken by teachers in implementing the Discovery Learning Model, including:

- (1) Stimulation ; In providing a stimulus to attract students' responses, the teacher can present an image.
- (2) Problem statement ; A step where the teacher presents a problem to students, for example by giving a question about the material being studied.
- (3) Data Collection ; The process of collecting the data to identify problems presented by the teacher.
- (4) Data Processing ; The process of processing the data to solve problems presented by the teacher.
- (5) Verification ; Students do the proof to find a truth about the problem being solved.
- (6) Generalization ; The process of coming at a conclusion that can be applied generally to all instances or issues of a similar nature, while also taking the verification results into consideration, is known as the sweeping statement stage.

Advantages and Disadvantages of Discovery Learning

As per Westwood (2008) there are advantages and disadvantages to discovery learning in terms of learning:

(1) The Advantages of Learning Self-Discovery. Learning through self-discovery has three advantages comprising:

- a. The learning process involves students actively, and the subjects are usually interesting in and of themselves.
- b. Activities related to discovery content are oftentimes more significant than textbook study and conventional classroom exercise.
- c. Learners acquire introspective and investigative skills that they can use in a range of contexts.

(2) Learner discovery Learning drawbacks

There are two drawbacks to discovery learning. Including:

- a. Discovery can be a time-consuming process, material can take a lot longer during the discovery process than it would during direct instruction.
- b. A learning environment with plenty of resources is usually required when using discovery methods.

3. METHOD

The author used quantitative research. This method is a scientific method because it adheres to scientific principles such as concrete or empirical, objective, measurable, rational, and systematic. It means that the data from this research can be counted, and the researcher used the statistical method to process the data. Sugiono (2011).

The author summarizes it by saying that quantitative analysis is a formal, objective and methodical approach that uses numerical data to collect knowledge or information. The goal of quantitative analysis is to describe variables, and see their relationship to each other, and find out how they interact. The writer applied pre-experimental design. To check the improvement in writing ability, the author applied a post-test. It was used to find students' writing ability after they were taught using the Discovery Learning Model.

In this design, the author chose one class to conduct a pre-test. After knowing the

results of the pre-test the researcher, the treatments using the Discovery Learning Model. Researcher also conducted a post-test to see whether there are differences before and after are applied using the Discovery Learning Model. Creswell (2014). According to Creswell (2014) sample is a part of the target population that the researcher intends to investigate in order to elaborate on the target population.

This means that a sample is a group of people chosen to be representative of the entire population. In this study, not all used populations were participants. The sample of this research is one class out of tenth class. This class will be used as the research sample. Then the researcher chose class Desain Communication visual 5 as the sample. Which consisted of 43 students. A cluster random sampling is used to determine the sample if the object to be researched or the data source is very broad, Sugiyono (2017).

The author used cluster random sampling technique, in which participants were selected randomly. The first step in collecting samples was author to make observations at SMK Bhakti Praja Margasri. After that, the researcher chose 1 class as a sample in this research. The researcher employed tests to acquire data. According to Brown (2004), a test is a tool for assessing a person's skill, knowledge, or performance in a certain subject. Before and after receiving treatment, students writing ability was measured through a test.

The primary data collection technique is the test technique. To collect data for this research, the researcher directed research through offline classroom teaching. There are three stages in conducting this experiment: The researchers conducted a pre-test. Students take a writing test with material in the form of pictures, which aims to see their initial ability in writing. Treatment the author uses Discovery Learning Model in writing procedure text. And post-test given after the treatment had been done to know the achievement and students' advancement after learning process

using discovery learning model in students writing procedure text.

4. RESULTS AND DISCUSSION

Results

The research results presented in the student post test can be described as follows:

1. Descriptive Analysis.

An essential aspect of research, descriptive statistics analysis describes the fundamental characteristics of the data to be used. Data has meaning if it can be conveyed through an easily understandable descriptive statistical summary of a data set, with or without analytics. The use of descriptive statistics simplifies the communication of information. The results of the frequency distribution are displayed in the following table.

Table 1. Distribution of Pre-test and Post-test Scores

Data Criteria	pre test	post test
N Valid	43	43
Missing	0	0
Mean	59.88	82.67
Median	60.00	85.00
Minimum	45	65
Maximum	75	100

Based on the table above, information is obtained that the pretest has a mean score of 59,88 with a median score of 60.00 , a minimum score of 45 and a maximum score of 75. Meanwhile, in the posttest, a mean score of 82.67 is obtained with a median score of 85.00 , minimum score of 65 and maximum score of 100.

2. Data Normality Test

The requirements analysis test was conducted using the normality test to determine whether the paired T-test or Wilcoxon test could be utilized. If the value of Sig. is greater than 0.05, the data are normally distributed and the paired T-test can be continued, whereas if Sig. is less than 0.05, the data are not normally distributed and the Wilcoxon test can be continued. Shapiro Wilk is used as the normality test because the number of samples is less than 50.

Table 2. Test Of Normality

		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
hasil belajar	pre	.123	43	.105	.948	43	.052
	post	.111	43	.200*	.961	43	.149

Source : Processed Data, SPSS.22(2023)

Based on the table above, it showed that the value of Sig. For pretest was 0.123, while the posttest was 0.111 . Both data have Sig values. > 0.05 , this means that the data is normally distributed, so the hypothesis significance test between two paired samples to determine the effectiveness of using Discovery Learning Method on students' writing ability in Procedure text was carried out with the Paired test.

3. Paired Test

Based on the results of the normality test that has been carried out, the significance test of the hypothesis of one sample paired t test to determine the effectiveness of using Discovery Learning Model on students' writing ability is used, namely the Paired test. The Paired test is a signed rank test that is used to compare the mean value of a variable from two paired sample data. The Paired test is used when the data is normally distributed. The following is the hypothesis and the basis for making a decision as follows.

Hypothesis:

Ho: There is a significant effect of Discovery Learning Model on writing ability

H₁: There is no significant effect of Discovery Learning Model on writing ability

Basis for Decision Making:

If the Sig < 0.05 then Ho is rejected and H₁ is accepted.

If the Sig > 0.05 then Ho is accepted and H₁ is rejected.

Based on the table above, the mean value is 22,791, it means there is an increase in the average pretest to posttest. Based on the table above, it can be seen that the T count or to is 17.081 with the df is 42 . The score of writing ability before being taught by Discovery Learning is enough, because the mean score of writing is 59.88 , and after the students got a treatment the mean of writing ability is 82.67

Then the researcher employed t-test. First, the researcher considered the df, df N- 1, here the df

is 42. The researcher consulted the score in t-table. The significant level of 0.000, the score of t-table is 1.720. By comparing the "t" that the researcher has got calculation to is 9.485 and the value of "t" on t-table to is 1.720. From the calculation above, to is bigger than t-table ($17.081 > 1.720$).

Table 3. Paired Samples Test

	Paired Differences				t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference			
				Lower Upper			
Pair 1 nilai pre test - nilai post-test	22.791	8.749	1.334	-25.483 -20.098	-17.081	42	.000

Source : Processed Data, SPSS.22(2023)

From the calculation above, t-count (to) is bigger than t-table. Thus, the alternative hypothesis (H₁) is accepted and the null hypothesis (Ho) is rejected, it means that there is any significant difference in writing ability score of tenth grade of SMK Bhakti Praja Margasari before and after being taught by Discovery Learning Model.

Further more, the value of Sig. of 0.000 < 0.05 , thus it can be decided that the pretest and posttest averages are different. Because the value of Sig. < 0.05 , then Ho is rejected and H₁ is accepted, which means Discovery Learning is effective in increasing students' writing ability.

In this section, the researcher explained the author findings. Writing is a way to transfer ideas or opinion into written form. Through writing, the learners can share ideas, opinion or feeling to others. As stated by Liu, (2001) writing is a way of communicating a message to a reader for a purpose. The purpose is to express ideas or opinion and to provide information, writing is a personal act in which the writer expresses the idea through written form. It means that writing is a way to express ideas or opinion through paper. It is supported by O'Malley (1995:136).

The author was done in the SMK Bhakti Praja Margasari academic year 2023-2024. The samples were chosen using cluster random sampling. The sample for this research class X DKV 5 as an experimental class. Based on the analysis, it was found that the class using Discovery Learning Model as the treatment was better. It means that with the treatment, the

improvement in the experimental class was better. It can be seen from the pre-test and post-test results that were given in class.

The author result, the average scores from the pretest and posttest revealed that the posttest average is 82.67, while the pretest average was 59.88 . It can be said that being taught how to using Discovery Learning Model, students showed considerable improvement in their ability to write Procedure text. The author, like teachers teaching in the classroom, gave treatment using Discovery Learning Model of learning, carried out in the classroom of 42 students.

The use of Discovery Learning Model can improve student activity in learning. Students are very interested in the Discovery Learning Model learning media with the discussion method; This is proven when researchers carry out discovery learning and students are more active in learning. Discovery Learning model can change students' thinking patterns so they can be more creative in writing.

Based on the result of the statistical computation using T-test, the result shows that there is any significant difference between pretest and posttest achievement. The result of t-test is to is bigger than t-table ($17,081 > 1.72$) Besides that, the value of Sig. of $0.000 < 0.05$, thus it can be decided that the pretest and posttest averages are different. Because the value of Sig. < 0.05 , then H_0 is rejected and H_1 is accepted, which means Discovery Learning Model gave an effect on students' writing ability.

5. Conclusion and Suggestions

Conclusion

This topic discussed the conclusion of the research. The purpose of this research is to find out if using of Discovery Learning Model gives an effect on tenth graders' ability to write Procedure texts, as it was discussed in the previous chapter. In this case, students who were being taught using of Discovery Learning Model indicated a considerable improvement in their writing abilities as a result of the lessons they learned.

Using the Discovery Learning Learning Model can improve the ability to write procedural texts. This is evident from the results of the pretest and posttest that students experienced an increase in their ability to write procedural texts after using the Discovery Learning Model in learning activities. Creating of the procedure text using Discovery Learning Model the infographic

option has been shown to improve students' writing abilities. H_0 is rejected and H_1 is accepted. Learning using Discovery Learning Model revealed effectively thrive students' ability in writing Procedure text. Before carrying out treatment, many students experience problems in writing procedure text. The biggest obstacles experienced by students are when determining connecting words, punctuations, and reference words in procedural texts. The final obstacle experienced by students when determining the steps in the procedure text. However, by using the Discovery Learning Model, Bhakti Praja Margasari Vocational School students will become accustomed to overcoming each of these obstacles.

Based on the table above, information is obtained that the pretest has a mean score of 59,88 with a median score of 60.00 , a minimum score of 45 and a maximum score of 75. Meanwhile, in the posttest, a mean score of 82.67 is obtained with a median score of 85.00 , minimum score of 65 and maximum score of 100.

The discovery learning model was introduced and used in this research. This is applied as a learning medium that is easy for students to understand. They might compose procedure texts very easily when doing it in groups using the Discovery Learning Model. Lastly, it is useful for teachers to realize the value of using the Discovery Learning Model to greatly facilitate learning for DKV 5 SMK Bhakti Praja Margasari. Based on the explanation above, using Discovery Learning Model as a learning media surely shows the real effectiveness in teaching especially in writing ability at the ten grade of SMK Bhakti Praja Margasari.

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