Differentiated Learning Strategy toward Students' Motivation and Cognitive Outcome on Descriptive Text

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Abstract. This research is aimed to find out the effectiveness of differentiated learning strategy to the students in learning descriptive text. The method of this study uses quantitative approach with the statistical data. The population of this research comprised of 36 students with the treatment of differentiated lerning strategy The data collection techniques used are written test and questionnaire. The data gathered was then analyzed and tested by using Paired Sample T Test. The results are as follows. 1) There is no difference in motivation of the students before and after using differentiated learning strategy with the sig. 0.517 and the average 56,72 before using differentiated learning strategy and 57,44 after using differentiated learning strategy. 2) There is a difference in cognitive outcomes of the students with the sig 0.000 with the average 58,47 before using differentiated learning strategy and 70,138 after using differentiated learning strategy.

Keywords: Differentiated Learning Strategy, Motivation, Cognitive Outcomes,

1. Introduction

Merdeka Belajar program of the Ministry of Education and Culture, the concept of differentiated learning becomes important to be applied in educational planning, especially for learning English. This concept is important for English teachers to understand and apply to move from subject-oriented into meaningful learning, which leads to students-oriented learning. Kurikulum Merdeka is identical with students-oriented learning as well as differentiated learning. Differentiated learning is learning that meets the learning needs of the students themselves. The teacher facilitates the needs of students because each student has different characteristics, so they are not treated the same in the learning process.

[1] There are at least three types of differentiated learning, differentiation of content, process and product." Differentiation of content examine student learning motivation in relation to the subject matter being taught. Differentiation of process, the teacher's role should be to analyze whether learning is carried out independently or in groups. Differentiation of product, the products can be essays, written test results, performances, presentations, speeches, notes, charts, etc. This is to ensure that students' understanding is relevant to the learning objectives that have been set. The purpose of this product is to help students better understand what they have learned individually or in groups.

[2] Regarding the principle of developing differentiated learning in a flexible curriculum as a form of independent learning, the application of differentiated learning is

implemented through a series of interrelated, continuous, and repeated, which creates a cyclical process as follows:

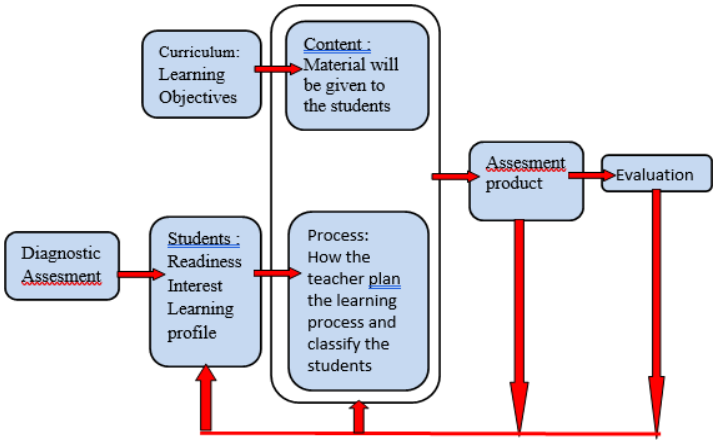

Figure.1. Differentiated Learning Process Cycle Adopted from Oaksford and Jones (2001)

Based on the picture above, here are the steps of implementation and assessment of differentiated learning strategy:

1. The teacher prepares a learning implementation plan including a formative assessment that will be carried out at the beginning of the lesson and an assessment at the end of the lesson.
2. The teacher conducts an assessment at the beginning of the lesson to assess the readiness of each individual to learn the material that has been designed.
3. Based on the results of the assessment, the teacher modifies the plan or makes adjustments for some students.
4. Conduct learning and use various formative assessment methods to monitor learning progress.
5. Conduct an assessment at the end of the lesson to determine the achievement of learning objectives. This assessment can be used as an initial assessment in the next lesson.

From the observations in class X MPLB, some of the students did not pay attention to the teacher when explaining the material because of the difficulties faced by the students regarding the material related to the English text. This is the fact that there are still many students who chat outside of the subject matter, draw, sleepy, and some even play cellphones secretly. In addition, the ineffective strategy implemented by teacher is a result of the learning loss experienced by students due to the Covid-19 pandemic. From these observations, it reflects the lack of learning motivation that students have, so they are not interested in doing learning activities. Therefore, it is very important for students to have learning motivation in order to achieve good learning outcomes. With high learning motivation, students will pay attention to the lessons delivered in class so that learning outcomes will increase.

Assessment of cognitive outcomes is used after the learning process to see student learning progress in terms of mastery of learning materials that have been taught in class using differentiated learning strategies. This assessment of cognitive outcomes aims to obtai

evidence data that will show the level of ability and success of students in achieving learning objectives. In addition, teachers can also use assessment to measure the learning effectiveness of differentiated learning strategy.

[3] Descriptive text is a text that describes things, places and people. This text is one of the functional texts that is quite difficult for students to learn. Many students have difficulty in reading the text, especially in understanding the text well. Difficulties in understanding texts must be known and resolved by students and teachers because understanding texts is an important skill and indicator of achievement in reading that must be achieved by students. If students have difficulties, it will affect their learning and cognitive outcomes. From the difficulties in understanding the descriptive text material, a learning strategy is needed to increase students' motivation and cognitive outcomes, namely by trying differentiated learning strategy.

[4] Differentiated learning provides different avenues to acquiring content, to processing or making sense of ideas, and to developing products so that each student can learn effectively. This explains that learning differentiation is to create diverse classes by providing opportunities for students to understand content, process ideas, and improve learning outcomes for each student to learn more effectively. Differentiated learning holds the view that each individual has different interests, potentials and talents, so the role of the teacher must be able to coordinate and collaborate on these differences with strategies. It is hoped, by implementing differentiated learning strategy can be the alternative solution to pursue learning losses experienced during the pandemic and be able to increase student motivation and cognitive outcomes. That is differentiated learning, as the main indicator in implementing Kurikulum Merdeka at school.

2 Method

The population on this study are 36 students with a business and management competency program, especially Office Management and Business Services Department (MPLB) in the academic year 2022/2023. Research conducted based on a quantitative approach, which data collection techniques in this research is in the form of a questionnaire and a written test given to students before and after treatment.

The first data collecting is learning motivation questionnaire. Using a questionnaire with 18 statements to collect data about students' learning strategy and motivation. Cognitive outcomes are often used as a measure to measure how well someone understands the material being taught. Cognitive outcomes achieved by pre-test and post-test. Pretest conducted before treatment of differentiated learning strategy to students. Posttest, the researcher gave learning after treatment differentiated learning strategy to the students. Pretest and posttest test used to determine cognitive outcomes is an objective test in the form of multiple choice with four answer choices with a total of 20 questions.

The data analysis uses paired sample t-test to show the difference of motivation and cognitive outcomes before and after using differentiated learning strategy. The Paired Sample t-test has the conditions that the two groups of paired sample data are normally distributed. Therefore, before conducting the paired sample t-test, a normality test is carried out first by using Kolmogorov-Smirnov method.

3. Discussion

The results of this research with differentiation strategy include differences in students' learning motivation and cognitive outcomes. Data collection on motivation and cognitive outcomes is carried out during the pretest and posttest. The material given about descriptive text with the following results :

3.1 The Difference of Students‘ Motivation

Based on the results of research on students‘ motivation while participating in learning, it can be seen through a student motivation questionnaire with 6 indicators and arranged into 18 statements. The instruments used have been validated and tested before being used to collect data. The average of motivation before and after treatment of differentiated learning strategy can be seen in the following table:

Table 1. Paired Samples Statistic of Students‘ Motivation

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	M1	56,7222	36	4,35307	,72551
	M2	57,4444	36	4,48773	,74795

The results of students‘ motivation by questionnaire obtained before treatment of differentiated learning strategy got an average value of 56.72 and the results of students‘ motivation by questionnaire obtained after treatment of differentiated learning strategy got an average value of 57.44 so it can be concluded that after being given a differentiated learning strategy, students‘ motivation increases

3.2 The Difference of Students‘ Cognitive Outcomes

Tests of students‘ cognitive outcomes can be identified by using a multiple choice test of 20 questions. The instruments used have been validated and tested before being used to collect data. Cognitive outcomes tests are used to determine the increase in student learning outcomes before and after being given treatment with differentiation strategy.

Table 2. Paired Sample Statistic of Cognitive Outcome

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PRETEST	58,4722	36	15,93825	2,65637
	POSTTEST	70,1389	36	14,11616	2,35269

The pretest results for students‘ cognitive outcomes obtained an average value of 58.47 and the posttest results for students‘ cognitive outcomes obtained an average value of 70.14. It can be concluded that student learning outcomes have increased after being given differentiated strategi

3.3 Normality Test

The data normality test is intended to find out that the sample data is from a normally distributed population. Sample data from the pretest and posttest of motivation and cognitive outcomes, the normality test uses the Shapiro Wilk method because the data is less than 50. Normality test if significant > 0.05 it means the distribution is normal whereas if significant <0.05 it means the distribution is not normal. The results of the normality test of the questionnaire data on motivation and cognitive outcomes can be seen in the following table :

Table 3. The Result of Normality Test for Students‘ Motivation

	Kolmogotov-Shirnov			Shapiro-Wilk		
	Statistic	**df**	**Sig**	**Statistic**	**df**	**Sig**
M1	,126	36	,160	,962	36	,255
M2	,104	36	,200	,941	36	,054

*this is a lower bound of te true significance
a. Liliefors Significance Correction.

The table above shows that the motivation before differentiated strategy shows a significant level > 0.05, namely with a significance value of 0.255 more than > 0.05. This shows that the motivation before differentiated strategy data is normally distributed. While the motivation data after differentiated strategy for the learning motivation questionnaire, shows a significance value of 0.054 more than > 0.05. This shows that the data on students‘ motivation is also normally distributed.

The results of the normality test of the questionnaire data on cognitive outcomes can be seen in the following table :

Table 4. The Result of Normality Test for Students‘ Cogntive Outcomes

	Kolmogotov-Shirnov			Shapiro-Wilk		
	Statistic	**df**	**Sig**	**Statistic**	**df**	**Sig**
Pretest	,103	36	,200	,956	36	,162
Postest	,119	36	,200	,949	36	,099

*this is a lower bound of te true significance
a. Liliefors Significance Correction.

The table above shows that pretest of cognitive outcomes shows significant level > 0,05, namely with thesignifivant value of 0,162 more than > 0.05. It means that cognitive outcomes is normally distributed. For posttest the significant value of 0,099 more than > 0,05 means that the data of cognitive outcomes is normally distribute

3.4 Hypotheses Test

After obtaining data on learning motivation and cognitive outcomes that are normally distributed, the hypothesis can be carried out using parametric statistical tes, paired sample t test with the criteria if the significant value > 0.05 then Ho is accepted and Ha is rejected. While if the significant value < 0.05 then Ha is accepted and Ho is rejected. The results of the paired sample t test are used to determine the difference in mean scores between the two paired groups, namely motivation before and after treatment and cognitive outcome pretest and posttest.

Table 5. The Hypotheses Result Test of Students‘ Motivation

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	Interval of the Lower	Upper			
Pair 1	M1 - M2	-,72222	6,62726	1,10454	-2,96457	1,52012	-,654	35	,517

The paired sample t test on learning motivation data, obtained a significant value of 0.517 more than > 0.05 so that Ho is accepted and Ha is rejected, it means that there is no significant difference between motivation before and after differentiated learning strategy.

Table 5. The Hypotheses Result Test of Students‘ Cognitive Outcomes

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	Interval of the Lower	Upper			
Pair 1	PRETEST - POSTTEST	-11,66667	10,35098	1,72516	-15,16894	-8,16440	-6,763	35	,000

The paired sample t test on cognitive outcomes data, obtained a significant value of 0.000 less than < 0.05 so that Ho is rejected and Ha is accepted, it means that there is significant difference on cognitive outcomes, pretest and posttest by differentiated learning strategy.

There are several explanantion about the result of hypotheses test, motivation and cognitive outcomes:

1. Students in MPLB department with 100% female all tend to have high cohesiveness and solidarity by obeying what has been ordered by their teacher. For example, no protesting with any method or strategy given by the teacher so it doesn't affect students‘ learning motivation
2. Freedom Curriculum has been implemented since academic year 2022/2023 with various assessments carried out by teachers including project assessments followed by assignments from all other subjects. This causes students to complain more and be burdened with project assignments so that student motivation not increasing.

3. As a result of the Covid-19 pandemic, students tend to prefer learning that is directly given by the teacher because of the learning loss experienced by students so they prefer to listen to it from the teacher
4. Differentiated learning strategy carried out in the X MPLB class did not show anything significant, they preferred learning strategies one size fit all and even it is not accordance with their interests and learning styles, but preferred the same as their friends.
5. The cognitive outcomes increases because in diffrentiated learning strategy the students are guided by the teacher to study deeply with the material given.

4. Conclusion

The effectiveness of differentiated learning strategy to the students in learning descriptive text can be concluded as follows :

1. The students‘ motivation by questionnaire before differentiated learning strategy got an average value of 56.72 and the results of students‘ motivation after differentiated learning strategy got an average value of 57.44 so it can be concluded that after being given a differentiated learning strategy, students‘ motivation increases
2. The pretest of students‘ cognitive outcomes got an average value of 58.47 and the posttest of cognitive outcomes got an average value of 70.14. So, the students‘ cognitive outcomes have increased after being given differentiated strategy
3. The paired sample t test on learning motivation data, the significant value 0.517 more than 0.05 so that Ho is accepted and Ha is rejected, it means that there is no significant difference between motivation before and after differentiated learning strategy
4. The paired sample t test on cognitive outcomes data, the significant value 0.000 less than <
5. 0.05 so that Ho is rejected and Ha is accepted, it means that there is significant difference on cognitive outcomes, pretest and posttest by differentiated learning strategy.

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