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# **Discussion, demonstration and motivation influence to achievement learning of accounting study field**

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## **Abstract**

This study aims to determine differences in learning outcomes and interactions, between demonstration and discussion learning, and who have high learning motivation and low learning motivation. Two-way variance data analysis technique is used by applying questionnaires and test methods of data collection techniques. The results of the calculations, which were conducted by using two-way variance, showed that there were influences and differences in learning outcomes for students taught through demonstrations, and discussion lessons were conducted in accounting lessons.

**Keywords:** demonstration, discussion, motivation, learning, outcomes.

# Influencia de la discusión, la demostración y la motivación para el aprendizaje del logro del campo de estudio contable

## Resumen

Este estudio tiene como objetivo determinar las diferencias en los resultados de aprendizaje y las interacciones, entre el aprendizaje de demostración y discusión, y que tienen una gran motivación de aprendizaje y baja motivación de aprendizaje. La técnica de análisis de datos de varianza bidireccional se utiliza aplicando cuestionarios y métodos de prueba de técnicas de recopilación de datos. Los resultados de los cálculos, que se realizaron utilizando la varianza de dos vías, mostraron que hubo influencias y diferencias en los resultados de aprendizaje para los estudiantes enseñados a través de demostraciones, y las lecciones de discusión se llevaron a cabo en las lecciones de contabilidad.

**Palabras clave:** demostración, discusión, motivación, aprendizaje, resultados.

## 1. INTRODUCTION

The form of teaching - the students who give and receive information, is often regarded as a prototype method, as a core component of active learning (McKeachie, 2002). Active classroom discussions teach this technique because it allows students to explore issues of interests, opinions, and ideas. However, it also leads to a deeper level of learning because to set ideas for each student must first

listen to and understand the contribution of other students to respond or add them. In addition, previous research has shown that during the discussion the students are considered, active, more involved, and motivated (Ryan and Patrick, 2001).

The bloom's cognitive process of taxonomy is a valid, reliable, efficient, and effective way of evaluation (Anderson et al, 1994; Lord and Baviskar, 2007; Noble, 2004). In particular, the first three levels of bloom's taxonomy (knowledge, understanding, and application) can be used to effectively assess cognitive results, as each level assesses learning at different depths. The most basic level assesses students' ability to remember material through questions that encourage students to identify, list, or draw a concept. The second level (comprehension) of the item is fast for students to reward information meaningfully to show that they understand the material. The third item (application) instructs students to apply the material on a new phenomenon or construction, which indicates their ability to select appropriate information from the situation.

Noble (2004) states that cooperative learning fosters the ability of team members' cooperation and results in higher student academic achievement Yaryari et al. (2008) suggest that cooperative learning methods have a positive effect on students' social skills and academic achievement, but no influence as observed in their self-esteem. They concluded in their study that the endurance of learning materials was higher in the experimental group than in the control group and the difference was significant, indicating that the cooperative group had

positive and significant differences with the lecture group in terms of creativity and academic achievement. In addition, strong, average, and weak students with different levels of creativity in their academic achievement based on interventions show that cooperative learning methods have a higher impact on the development of students' social skills than traditional teaching methods. The results of Sangestani and Khatiban (2013) research show that the mean of test evaluation points of instruction given to students is significantly higher in the group discussion method compared with the teaching method of the lecture. While the results showed that the level of satisfaction is higher in students who have been taught in the method of group discussion than the method of teaching lectures.

While the literature on teaching effectiveness is extensive, much of the literature is focused on effectiveness, or perceived effectiveness, of interactive teaching strategies. This strategy can range from appropriate use of media and electronic resources Serva and Fuller (2004) to household tasks Bolin et al (2005) and quizzes Crone (2001) and projects group (Kreiner, 2009). For example, Forrest (2005) took his students on field trips to a hockey game, enabling them to see psychological principles, such as suitability and group bias, directly. Other instructors have created classroom games based on television shows like "Jeopardy" Binek-Rivera and Mathews (2004) and "Who Wants to Be a Millionaire?" Forsyth (2003) to improve student engagement and enthusiasm in the classroom.

Demonstration involves activities that occur in the classroom as a means to show how the phenomenon 'works' (Dunn, 2008). This technique is a bit more active than lectures because students can get involved and see firsthand how constructs or phenomena are present in the real world. In addition, demonstrations can break the classroom rate while also providing an enjoyable experience for students (Forsyth, 2003). Generally, however, demonstrations involving only a few students in the classroom, have guidelines and parameters that determine the course of the learning process, and usually lead to very specific and often predetermined results.

This confusing state ultimately led many to consider the decline in performance to be: a poor service condition for teachers; lack of qualified teachers; inadequate supply of facilities and equipment; lack of motivation, lack of teaching materials; and wrong teaching methods. The fall in student achievement standards at all levels of education has been reported and recognized by everyone in Nigeria to catch a glimpse of the terrible decline in performance standards in Nigeria. (Agbo, 2012).

Empirical reality so far at the school level shows that in the learning process, the centralized textbooks, and monomedia. This leads many students to consider the learning process as tedious, monotonous, less fun, too much rote, less varied, and various other complaints (Ahsan, 2007).

In the last decade, a large number of studies began empirically testing the cognitive effects of active teaching techniques on learning outcomes. However, the results are diverse and often contradictory (Michel, et al., 2009). For example, some empirical studies show that active teaching techniques are superior to lectures Serva and Fuller (2004) and Michel et al (2009), while others argue that there is no real difference (Dorestani, 2005). Thus, further research is needed.

## **2. METODOLOGY**

### **2.1 Research Design**

This study used a quasi experimental design method (quasi experiment), which uses all subjects in the intact group to be treated (treatment), rather than using randomly drawn subjects. One of the sample groups was treated in the form of group discussion, while the other group was given treatment of demonstration method learning. Then each group was split into two, namely the control group and the experiment group with high motivation and the control group and experiment with low motivation.

### **2.2 Sample Research**

The sample is a population of less than the population. Sutrisno (1987), provide a sense of the sample is a process of attracting some of the research subjects, symptoms or objects that exist in the population.

Thus, research conducted on samples in the population results will be used to interpret the population (Properties and characteristics), which became the sample in this study are 2 classes of 80 students.

### **2.3 Method of collecting data**

In this study using data collection techniques: 1) Questionnaire Method or questionnaire and 2) Test Method.

### **2.4 Data analysis technique**

#### **2.4.1 Test prerequisite analysis**

Before the data is analyzed, it is necessary to test the prerequisite analysis that is normality test and homogeneity test is described as follows.

#### **2.4.2 Normality test**

Normality test with the aim of knowing whether the data obtained is normally distributed or not. The test used is by using kolmogorov-Smirnov, with the hypothesis:

H<sub>0</sub> = Data is normally distributed

H<sub>1</sub> = Data is not normally distributed

The Criteria are as follows:

- Probability sig.,  $A > 0.05$  then the data is normally distributed.
- Probability sig.,  $A < 0.05$  then the data is not normally distributed.

### 2.4.3 Test homogeneity variant

By criterion, the data has a homogeneous variance if  $F$  count  $< F_{1-2} / (n_1-1) (n_2-2)$ . To test the hypothesis, then the data must have homogeneous variance. Hypothesis testing. After the prerequisite test, hypothesis testing is done using two paths of Anava.

## 3. DISSCUSSION AND RESAULTS

### 3.1 Normality test

Table 1. Test results on normality of demonstration methods

One-Sample Kolmogorov-Smirnov Test

		Demonstration Method
N		40
Normal Parameters <sup>a,b</sup>	Mean	83.0750
	Std. Deviation	9.49868
Most Extreme Differences	Absolute	.120
	Positive	.120
	Negative	-.120
Kolmogorov-Smirnov Z		.761
Asymp. Sig. (2-tailed)		.609

a. Test distribution is Normal.

b. Calculated from data.

The value of K-S for demonstration learning data obtained value of .760 with probability significance of 0.607 and its value above  $\alpha = 0.05$  this means that the accepted null hypothesis or learning result data using for the class of demonstration method distribution normally.

Table 2. Result of normality test of discussion method

**One-Sample Kolmogorov-Smirnov Test**

		Discussion Method
N		40
Normal Parameters <sup>a,b</sup>	Mean	75.7500
	Std. Deviation	9.84170
Most Extreme Differences	Absolute	.163
	Positive	.163
	Negative	-.145
Kolmogorov-Smirnov Z		1.029
Asymp. Sig. (2-tailed)		.241

a. Test distribution is Normal.

b. Calculated from data.

The value of K-S for demonstration learning data was found to be 1,029 with probability significance of 0.241 and its value above  $\alpha = 0.05$  this means the accepted null hypothesis or learning result data by using for normally distributed discussion method class.

### 3.2 Homogeneity Test

Homogeneity calculation results can be known from the table as follows.

Table 3. Homogeneity Calculations  
Dependent Variable: learning outcomes of accounting

<b>F</b>	<b>Df1</b>	<b>Df2</b>	<b>Sig.</b>
2.364	3	76	.078

Test the null hypothesis that the error variance of the dependent variable is equal across groups.

- a. Design : Intercept
- b. +A\_Factor+B\_Factor+A\_Factor\*B\_Factor

Based on the above table it can be seen that the probability value of the above data is 0.078, meaning probability > 0.05, this gives the sense that the class data for the method of demonstration and discussion method is homogeneous.

### 3.3 Hypothesis testing

Table 4. Descriptive Results Achievement in Accounting  
**Decriptive Statistics**  
Dependent Variable: Learning Outcomes of Accounting

<b>A_Factor</b>	<b>B_Factor</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>N</b>
Learning of Demonstration	High Motivation	86.2000	6.55824	20
	Low Motivation	79.9500	11.02855	20
	Total	83.0750	9.49868	40
Learning of Discussion	High Motivation	77.7500	9.10104	20
	Low Motivation	73.7500	10.37139	20
	Total	75.7500	9.84170	40
Total	High Motivation	81.9750	8.92271	40
	Low Motivation	76.8500	11.02340	40
	Total	79.4125	10.29279	80

From the above table it can be seen that there are differences in average learning outcomes accounting in each class of demonstration and discussion on students with high motivation and low motivation.

Table 5. Test the mean difference of demonstration methods and discussion methods

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Learning Outcomes of Accounting	Equal variance assumed	.089	.767	3.387	78	.001	7.32500	2.16286	3.01947	11.63053
	Equal variance not assumed			3.387	77.902	.001	7.32500	2.16286	3.01939	11.63061

From the above table we can get the significance value below 0.05 ( $\alpha < 0.05$ ), so it can be explained that there are differences in accounting learning outcomes in students of Class XI in vocational high School Muhammadiyah and vocational high School Karya Dharma Lesson 2009/2010 by using demonstration method and Method of discussion.

Table 6. Test Different average students with high motivation and low motivation on demonstration methods

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Learning Outcomes	Equal variances assumed	7.903	.008	2.178	38	.036	6.25000	2.86914	.44173	12.05827
	Equal variances not assumed			2.178	30.944	.037	6.25000	2.86914	.39792	12.10208

From the table above, the significance value below 0.05 ( $\alpha < 0.05$ ), so it can be explained that there are differences in student learning outcomes in the subjects of Accounting in students of Class XI in

vocational high School Muhammadiyah and vocational high School Karya Dharma Lesson 2009/2010 year have high learning motivation with low motivation to learn on demonstration method.

Table 7. Test Different average students with high motivation and low motivation in the method of discussion

		Independent samples Test								
		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
<b>Learning Outcomes</b>	Equal variances assumed	.378	.542	1.296	38	.203	4.00000	3.08541	-2.24608	10.24608
	Equal variances not assumed			1.296	37.369	.203	4.00000	3.08541	-2.24954	10.24954

From the above table we can get the significance value above 0.05 ( $\alpha > 0.05$ ), so it can be explained that there is no difference in the result of Accounting study in the students of Class XI in vocational high School Muhammadiyah and vocational high School Karya Dharma Lesson 2009/2010 which has motivated to learn high with low motivation to learn on the method of discussion.

Table 8. Results of Anava 2 Path Test

**Tests of Between-Subjects Effects**

Dependent Variable: Learning Outcomes of Accounting

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1623.738 <sup>a</sup>	3	541.246	6.098	.001
Intercept	504507.613	1	504507.613	5684.045	.000
A_Factor	1073.113	1	1073.113	12.090	.001
B_Factor	525.313	1	525.313	5.918	.017
A_Factor*B_Factor	25.313	1	25.313	.285	.595
Error	6745.650	76	88.759		
Total	512877.000	80			
Corrected Total	8369.388	79			

a. R Squared = .194 (Adjusted R Squared = .162)

Based on the above table it can be explained that:

1. FA ratio (value F arithmetic on learning method) = 12.090 with significance value smaller than  $\alpha < 0,05$  0.000, with  $df_1 = 1$  and  $df_2 = 76$  got value of F table = 3,98 so it can be explained that F arithmetic  $>$  F table, meaning there is influence of learning outcomes between demonstration methods and discussion methods applied to students of Class XI in accounting subjects in vocational high School Muhammadiyah and vocational high School Karya Dharma Lesson 2009/2010.

The results of this test support the results of previous research conducted by (Dunn, 2008), which states demonstrations involving activities that occur in the classroom to show how a 'work' phenomenon. This technique is a bit more active than the lecture, because students can get involved and see how the build or phenomenon presents itself in the real world. In addition, demonstrations can break the classroom rate based on an enjoyable experience for students (Forsyth, 2003). However, in general, demonstrations involving only a few students in the classroom, have guidelines and parameters dictate the path of the learning process, and are usually very specific, often determined results. For example, in one demonstration, three students were asked to come to the front of the room and identify the taste of jellybeans to show the dominance of the olfactory bulb on taste. As part of the demonstration, one student was instructed to eat a normal jellybean, one student was instructed to close his eyes while eating jellybean and the third student was instructed to close his eyes while also entering his nose while eating the jellybean. As a third person often cannot identify that jellybeans the strongest

taste, this demonstration is the best way, usually perfect, and sometimes funny to illustrate the importance that smells have on our ability to sense. However, this demonstration does not allow all students to experience the phenomenon. Thus, students are not involved, just passively receiving information.

2. The ratio of FB (F value count on student learning motivation level) = 5,918, with significance value smaller than  $\alpha < 0,05$  that is 0,017, with  $df_1 = 1$  and  $df_2 = 76$  got value of F table = 3,98 so can be explained That F value  $>$  F table, meaning there is influence of learning outcomes between students who have high learning motivation and students who have low motivation in students of Class XI in accounting subjects in vocational high School Muhammadiyah and vocational high School Karya Dharma Lesson 2009/2010.

The results of this test support some of the results of previous studies, such as the results of research Ryan and Patrick (2001), stating that students need to be given choices, opportunities to make decisions, and feel that they have control over the environment and they learn. Students must also receive instruction in self-directed behavior such as goal setting. Teachers can have an easier time dealing with behavior if they try to recognize the basic motivation of delinquency. There are many actions teachers can take in order to improve student motivation.

3. The value of significance in the interaction between factor A (demonstration method and discussion method) and factor B (high student learning motivation and low learning motivation) obtained F

value counted 0.285 with significance level 0.595, comparison with F table and significant level  $\alpha = 0.05$ ; ( $0.285 > 3.98$ ), so it can be explained that factor A (method of demonstration and method of discussion) and factor B (high learning motivation and low learning motivation) have no effect on learning outcomes in Accounting subjects. This means that there is no interaction between demonstration methods, discussion methods and learning motivation on student learning outcomes Class XI in accounting subjects in vocational high School Muhammadiyah and vocational high School Karya Dharma Lesson 2009/2010.

Based on the results of calculations and test results conducted in each class can be explained that the results of Accounting Students Class XI in vocational high School Muhammadiyah and vocational high School Karya Dharma Lesson 2009/2010, at the beginning of learning have the same ability, the average learning outcomes are the same. After the treatment using the method of demonstration and discussion methods there are significant differences in results, there is an increase in the results of study accounting in students Class XI vocational high School Muhammadiyah and vocational high School Karya Dharma Lesson 2009/2010.

It provides an illustration that learning by using demonstration methods provides students with the motivation to learn and improve their learning outcomes. Similarly, students who use the method of discussion also have a significant average on learning outcomes. It can

be explained that the students get involved in the learning process actively, so that the material can be absorbed well.

The results of this calculation indicate that the proposed hypothesis is acceptable, where there are differences in the results of accounting study of Class XI students at the vocational high School Muhammadiyah and vocational high School Karya Dharma Lesson 2009/2010 between classes taught using demonstration methods and taught using the method of discussion.

Furthermore, the motivation of the students in the learning process is very likely different, where students have high learning motivation and some have low learning motivation, the difference motivation of this student to give its own influence on student learning outcomes. This is also indicated by the average difference test, where the results of both achievement (students with high motivation and low motivated students) with different learning methods, on the demonstration method showed significantly different results between students who have high and low motivation shown by  $T_{count} > t_{table}$  and significance value less than 0.05, while the discussion method shows the value of  $t_{arithmetic} < t_{table}$ , meaning no significant difference in student learning outcomes that have high motivation with students who have low motivation.

This means that the second hypothesis is acceptable, that is, there are differences in students' learning outcomes Class XI vocational high School Muhammadiyah and vocational high School

Karya Dharma Lesson 2009/2010 between those who have high learning motivation and who have low learning motivation.

In addition, by using the analysis of 2-way variance, FB values (F arithmetic for high student motivation and low student motivation) showed that FB is greater than Ftable, thus giving meaning that there is influence of learning result between students who have high learning motivation and Students who have low motivation in students of Class XI in Accounting subjects in vocational high School Muhammadiyah and vocational high School Karya Dharma Lesson 2009/2010.

Based on the above description can be explained that students with high learning motivation by using demonstration methods have high learning outcomes Accounting compared with the results of students who have low motivation. Students with high learning motivation using the method of discussion have the same learning outcomes with the results of students who have low motivation.

While the calculation is done to know the interaction between the two, the method of demonstration and the method of discussion with students who have high learning motivation and low learning motivation can be explained that there is no significant interaction between learning models (methods of discussion and methods of demonstration) and student learning motivation on the results Learning. This is indicated by the value of F arithmetic  $< F$  table and the level of significance greater than 0.05 (5%), so it can be explained that there is no interaction between learning methods with motivation

owned by students. This means that there is no interaction between demonstration method, discussion method and learning motivation toward student achievement of Class XI in accounting subject at vocational high School Muhammadiyah and vocational high School Karya Dharma Lesson Year 2009/2010.

#### **4. CONCLUSIONS**

Based on the results of calculations and test results conducted in each class can be explained that, at the beginning of learning students have the same ability, average learning outcomes are the same. Having been treated using demonstration methods and discussion methods there were significant differences in outcomes. This illustrates that learning by using demonstration methods gives students the motivation to learn and improve their learning outcomes. Similarly, students using discussion methods also have a significant average of learning outcomes.

##### **4.1 Implications**

From the previous research and theory presented above, and thereafter conducted research found that the implications of using demonstration methods gave students the motivation to learn and improve their learning outcomes. Similarly, students

using discussion methods also have a significant average of learning outcomes.

## **4.2 Practical Implications**

After conducting research in Class XI vocational high School Muhammadiyah and vocational high School Karya Dharma Lesson 2009/2010, can be seen using demonstration methods to give students the motivation to learn and improve their better learning outcomes.

## **4.3 Social Implications**

From the results of research in Class XI vocational high School Muhammadiyah and vocational high School Karya Dharma Lesson 2009/2010, then this can be applied in other school places.

## **4.4 Originality / Value**

From the design of this study, the originality or value of research is to learn by using demonstration methods to motivate

students to learn and improve their learning outcomes. Similarly, students using discussion methods also have a significant average of learning outcomes.

## **5. DECLARATIONS**

### **Availability of data and material**

The availability of data in this study we obtained from schools (where researching) and the central statistical agency of Indonesia.

### **Competing interests**

There is no other interest in this research, except for the development of science alone

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