

# Student Worksheet Based Model of Project Based Learning in Accounting Major of Vocational High School

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**ABSTRACT.** This study aims to determine: 1) The difference in student learning outcomes taught by the cooperative learning model project based learning type with conventional learning models, 2) The difference between student learning outcomes taught with the help of student worksheets is higher than the learning outcomes of students who are not taught by using student worksheets, 3) Whether or not there is an interaction between learning models and worksheets on student learning outcomes in service company accounting material. The sample of this study amounted to 64 students consisting of the experimental class and the control class. The data analysis technique used was ANOVA (Analysis Of Varians). The results of the study are: 1) There is an effect of using the project-based learning cooperative learning model on student learning outcomes in service company accounting material, 2) The use of project-based learning cooperative learning model assisted by student worksheets can provide better learning outcomes than conventional models, 3) There is no interaction between the cooperative learning model project based learning and student worksheets.

**Keywords:** *Student Worksheet, Model Of Project-Based Learning Learning, Accounting Vocational High School.*

## 1. INTRODUCTION

The Current progress in the field of information and communication technology has had an impact on various aspects of human life, especially in the aspect of education. Education in the era of the industrial revolution 4.0 requires everyone to be literate in information and communication technology. Technological sophistication makes learning more attractive and efficient so that students are active in acquiring knowledge. This is also supported by the provision of the revised 2013 curriculum which is student-oriented. This means that students must be more active in carrying out the learning process. Based on observations made by researchers in several vocational high schools, especially the major in Accounting, information was obtained about learning problems faced by students. These problems are the difficulty of teaching materials / electronic reference books, the absence of accounting worksheets that can help the learning process of student accounting, existing teaching materials are less attractive so students are not interested in reading them, there are even students who are reluctant to bring textbooks to school because of these books. feels thick and heavy to carry around. So that students' knowledge of accounting basics, especially in service company accounting, only comes from teachers. The level of accounting skills is very important [1]. The basics

of accounting, especially the accounting material for service companies, are used as a guide to understanding all accounting practices and theories. However, the fact is that students' basic accounting concepts are still low in accounting for service companies, which can be seen in the learning process. The problem of students was that they generally experienced difficulties because they were not able to do practice accounting questions and were unable to develop their accounting skills optimally. Based on the analysis of the description above, the researcher seeks to make a new innovation in learning service company accounting to improve students' accounting skills through student worksheets in the Accounting subject. Student Worksheets (LKS) have an important role in the learning process because LKS can be used as a learning resource and organize tasks that must be done by students so that learning objectives can be achieved. Therefore, we need a form of LKS that bridges between teaching and learning activities and learning resources. The ability of teachers to innovate the application of learning strategies is an important factor in realizing quality learning. The application of learning strategies is generally based on student learning problems that demand resolution. Learning should be directed at students' active activities in obtaining information, one of which is project- based learning. This learning model spurs students to do active activities through

project work designed by the teacher to help them build their own knowledge. The use of learning models combined with learning media will provide new colors in learning activities, thus enabling students not to get bored and bored quickly in learning activities [2]. The use of this LKS as a companion to the Project Based Learning model for student learning activities is expected to be able to improve the quality of learning, so that student learning outcomes can increase [3]. Project-based learning can develop soft skills and improve the quality of learning outcomes. Problems must be in line with the learning objectives that students will solve through accountable scientific methods. Through this series of processes, students are expected to have the ability to think systematically and analytically [4]. Teacher creativity in designing and developing learning designs is needed so that learning becomes more interesting and innovative. Learning in the current era is more emphasized on the overall understanding of students, not on memorization which is very theoretical. This paradigm shift has also shifted the role of the teacher who was originally the main source of learning activities, now only becomes a facilitator and motivator in learning activities. Planning in project-based learning requires careful planning in all aspects that support it. This planning allows the transfer of organized stimulus in one phase of the subject matter to another through certain instructional objectives. The most fundamental thing in planning learning is the setting of goals or objectives. Goal setting is the initial basis for determining / designing the right problematic situation. Situations that have a confusing character and are not clearly believed can spur students' interest in investigating. Designing structured problem situations is the teacher's responsibility to create an effective learning atmosphere. Many studies have examined the cooperative learning model of Project Based Learning. In general, this learning model is developed without going through power point media, but very few studies have examined the application of the Project Based Learning cooperative learning model assisted by student worksheets, especially in accounting subjects. Even though student worksheets are very helpful in solving the practice questions given by

the teacher. Therefore, in general, this article has novelty, because this research develops media in the form of student worksheets in the application of the Project Based Learning cooperative learning model to accounting students (AKL) at SMKN 5 Tangerang Regency.

## **2. METHODS**

This type of research is a quasi experiment or quasi-experimental research. Based on this, the authors took the existing classes to conduct this research and did not create a new class as an experimental class. The experimental class was given treatment in the form of a project based learning model. While the control class was given treatment in the form of a conventional learning model. The method used in this research is the experimental method with the dependent variable of student learning outcomes, the independent variables are classified into project based learning models and conventional learning models, while the control variables are classified into high initial knowledge and low initial knowledge. The research design used was ANOVA design. This research was conducted on class X AKL 1 and X AKL 2 at SMKN 5 Tangerang Regency. The total population of class X AKL is 70 students. The sampling technique of this study used a total sampling technique so that there were 70 students. The data analysis technique used is ANOVA (Analysis Of Varians).

## **3. RESULTS AND DISCUSSION**

### **3.1 Testing Requirements Analysis**

The data analysis technique in this study used the average difference test. In using the average difference test, the data must come from a normally distributed population and homogeneous variance group data [5].

### **3.2 Normality Test**

The data normality test used the Kolmogorov-Smirnov test. The program used is SPSS Version 22.00 using the Kolmogorov-Smirnov formula. The summary of the results of the analysis of normality testing of the research variables can be seen in Table 1.

**TABEL 1.** Summary Of Research Variable Data Normality Test Results

No	Research Variable	Sig.	Ket
1	Accounting learning outcomes using a project based learning model	0,241	Normal
2	Accounting learning outcomes using conventional learning models	0,215	Normal
3	Student group accounting learning outcomes are taught with the help of student worksheets in the use of project based learning models	0,572	Normal
4	Accounting learning outcomes for groups of students who are not taught with the help of student worksheets in the use of project based learning models	0,680	Normal

Based on Table 1, it can be seen that the significance value (Sig.) For all tested data is greater than alpha 0.05 or  $Sig > \alpha 0.05$ . This means that all research variables have data.

**1. Homogeneity Test**

The homogeneity of the data for this population group was carried out to see whether the data obtained came from a homogeneous sample group.

The homogeneity examination of the data is aimed at the sample groups, namely the students' accounting learning outcomes. The program used is the SPSS version 22.00 program using the test of homogeneity of variances. The summary of the results of the analysis of the variance homogeneity test for population groups can be seen in table 2.

**TABLE 2.** Summary Of Variance Homogeneity Test Results

Variable	Levene Statistic	df1	df2	Sig.
Accounting Learning Outcomes	2,864	1	62	0,096

Based on Table 2, the test of homogeneity of variances column can be seen that the significance value (Sig.)  $> 0.05$ . on the accounting learning outcomes variable sig. amounting to  $0.096 > 0.05$ . This means that the data variance of population groups is homogeneous.

**3.3 Hypothesis Test**

Hypothesis 1 and 2 in this study were tested by t-

test, while hypothesis 3 was carried out by using two-way analysis of variance. The research hypothesis that has been formulated into a statistical hypothesis is tested first.

- 1) The results of student group accounting learning taught by project based learning models are higher than the learning outcomes of students taught by conventional learning.

**TABLE 3.** Summary Of The Results Of The First Hypothesis Testing Analysis

Variable	Number Of Samples	Standard Deviation	Score Average	Difference Average	Score		Score	
					Sig.	Alpha	tcount	ttable
Learning outcomes in Accounting Learning Model Project Based Learning	$n_1 = 35$	7,72	82,34	7,81	0,000	0,05	5,416	2,02
Learning outcomes in Accounting Learning Model Conventional Learning	$n_2 = 35$	6,14	74,53					

Based on the results of hypothesis testing that has been done, it is known that the Project Based Learning Learning Model is higher than the results of learning Accounting for groups of students who are taught using conventional learning, in the Sig.

$0.000 < \alpha 0.05$  and  $tcount = 5.416 > ttable = 2.02$  at the 95% confidence level. This means that the results of learning Accounting using the Project Based Learning Learning Model are higher than the results of learning Accounting using conventional

learning. Thus, the first null hypothesis is rejected which states "Accounting learning outcomes for groups of students taught with Project Based Learning Learning Model are not higher than student learning outcomes with conventional learning" and the alternative hypothesis which states "Accounting learning outcomes for groups of students taught with Learning Model Project Based Learning is higher than the learning outcomes of students with conventional learning Accounting "can be accepted and has been tested for truth. This is in line with previous research which states that the project-based learning model assisted by flashcard media is proven to improve the economic learning outcomes of high school students in

Boyolali Regency [6]. This model can be a means for students to be able to develop communication skills, develop learning experiences through direct interaction with learning resources and the ability to organize projects. So that through the application of this learning model students can be more motivated and the knowledge gained can be embedded in the minds of students.

2) Student Group Accounting Learning Outcomes Assisted by Student Worksheets Taught with a Project Based Learning Learning Model is Higher than Student Accounting Learning Outcomes Assisted by Student Worksheets Taught with Conventional Learning

**TABLE 4.** Summary Of The Results Of The Second Hypothesis Testing Analysis

Variable	Number Of Samples	Standard Deviation	Score Average	Difference Average	Score		Score	
					Sig.	Alpha	t <sub>hitung</sub>	t <sub>Tabel</sub>
Accounting learning outcomes assisted by student worksheets using a project based learning model	n <sub>1</sub> = 35	8,54	85,63	8,44	0,030	0,05	3,710	2,02
Learning outcomes of accounting without the help of student worksheets using a project based learning model	n <sub>2</sub> = 35	4,82	77,19					

Based on the results of hypothesis testing that has been done, it is known that the results of student group accounting learning assisted by student worksheets taught with a project-based learning model are higher than the results of student accounting learning assisted by student worksheets taught with conventional learning, in the Sig. 0.030 <alpha

0.05 and tcount = 3.710> ttable = 2.02 at the 95% confidence level. This means that the results of student group Accounting learning assisted by student worksheets taught using the Project Based Learning Learning Model are higher than students who learn using conventional learning. Thus, the second null hypothesis is rejected. "The results of student group accounting assisted by student worksheets are significantly not higher than the group of students who are taught not assisted by student worksheets." and the alternative hypothesis which states "The results of student group

accounting which are taught with the help of student worksheets are significantly higher than the group of students who are not taught with the help of student worksheets" can be accepted and have been tested for truth. This is supported by previous research which states that the effectiveness of Learning- Based Project-Based Accounting Worksheets uses covariance analysis (Ankova) by first testing the assumptions of normality, variance homogeneity, and linearity assumptions. The results of the analysis of covariance show a significance value of 0.000 less than the significance level of 0.05, so it is concluded that the use of Project Based Learning-based Accounting Worksheets is effective in learning [2].

3) The Interaction Between Project Based Learning Learning Models And Student Worksheets On Accounting Learning Outcomes

**TABLE 5.** The Summary Of The Results Of The Analysis Of Hypothesis Testing To The Students' Work On Accounting Learning Outcomes

Source of Variation	dk	JK	RJK	Fhitung	Sig.	alpha
Between Lines =B(b)	1	885,812	885,812	21,056	0,000	0,05
Between groups=K(k)	7	870,387	124,341	2,956	0,012	0,05
Interaction =b <sub>xk</sub>	6	80,335	13,389	1,245	0,305	0,05
In Group	64	397750,000				

Based on the results of hypothesis testing that has been done, it is known that there is no interaction between the Project Based Learning Learning Model and student worksheets in influencing the learning outcomes of service company accounting. the value of Fcount = 1,245 with the value of sig. amounting to 0.305. This is greater than an alpha of 0.05. This means that there is no interaction between the project based learning model and student worksheets in influencing the learning outcomes of service company accounting. That is, the third null hypothesis is accepted and the alternative hypothesis which states "there is an interaction between the Project Based Learning Model and student worksheets on the accounting learning outcomes of Class X AKL SMKN 5 Tangerang Regency" is rejected because there is no interaction between variables. Project-Based Learning (PBL) is an innovative approach to learning that teaches a multitude of critical strategies for success in the twenty-first century. Students drive their own learning through inquiry, as well as work collaboratively to research and create projects that reflect their knowledge [8].

#### 4. CONCLUSIONS

The results of this study concluded that:

1. There is an effect of the use of the Project Based Learning Model on the learning outcomes of Class X AKL at SMKN 5 Tangerang Regency. This means that the learning outcomes of student groups taught by the Project Based Learning Model are higher than the learning outcomes of student groups taught with conventional learning economies.
2. The learning outcomes of student group accounting assisted by student worksheets taught with a project based learning model are higher than the learning outcomes of students assisted by student worksheets taught with

conventional learning.

3. There is no interaction between the Project Based Learning Learning Model and student worksheets on the learning outcomes of Class X AKL SMKN 5 Tangerang Regency.

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