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THE EFFECTIVENESS OF PROBLEM BASED LEARNING MODULE WITH ACCOUNTING COMPUTER MODULE TEACHING MATERIAL TOWARD LEARNING OUTCOMES OF THE ELEVENTH GRADE STUDENTS OFSMK NEGERI 1 WONOGIRI

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ABSTRACT : The learning goal of accounting in ideal can be reached out by the students of Accounting program, but the fact shows that the implementation of accounting learning in MYOB material has not been showed the satisfying result yet. This research is aimed to test the difference of the Model Problem Based Learning's effectiveness with Accounting computer module teaching material with conventional model toward the learning outcomes of the eleventh-grade students of SMK Negeri 1 Wonogiri. The non-equivalent posttest control group design is implemented to get the students' learning outcomes with knowledge test instrument and practical test of MYOB application. The participants of the research are 184 of the eleventh-grade students of Accounting program in SMK Negeri 1 Wonogiri, Indonesia which are decided by implementing random sampling. The technique of data analysis adjusted by independent t-test. The conclusion of this research and discussion showed that (1) The result of independent t-test score showed significant score 0,000 ($<$0,05), so it can be concluded that there is significant difference of Model Problem Based Learning with Accounting computer module with the conventional learning model toward the learning outcome of the eleventh grade students of SMK Negeri 1 Wonogiri, (2) Problem Based Learning model that with Accounting computer module is potential to improve students' learning outcomes higher than conventional model. The average score of Problem Based Learning model with Accounting module computer showed 85, 11 and the conventional model showed 78,29.

Keywords:Accounting learning outcomes, Accounting computer module, problem-based learning

I. INTRODUCTION

The expansion of manual to computerized Accounting recording becomes the technological development of Accounting in 4.0 Revolution Industry era. Mind Your Own Business (MYOB) is an application that is taught in almost educational institution becomes compulsory project for the eleventh grade of vocational school students of Accounting program (Machera, R., P., & Machera, P., C., 2017).By implementing MYOB application, the students will experience to develop and implement Accounting science of company accounting science. Students training competence of MYOB will produce the students' ability to entry financial data to the computer which started from the company new data, create list of account and or import data account, set up lingk account, make card file, input the starting balance through journal, and entry purchase, sales, income, receipt, and expenditure cash transaction data of trading company.

The purpose of accounting learning in ideal can be obtained by the students of Accounting program, but the fact showed that the implementation of MYOB Accounting learning had not been showed satisfying improvement yet. Based on the early field observation, in fact there are many students of Accounting program in SMK Negeri 1 Wonogiri who got some difficulties in operating MYOB Accounting. The reality of lack competence of MYOB programming also can be viewed from the process of observation learning result in SMK Negeri 1 Wonogiri. The observation result by implementing cognitive ability test showed 65% of students' scores are in the uncompleted level. The students' low completeness was caused by the low quality of learning process, so it affected in the low students' learning result.

The disparity of graduates' ideal condition that possess competitiveness in revolution industry era 4.0 completed the fact that must be overcome by the teacher as learning executor. The teacher is obliged to give more innovative learning strategies in accordance with the students in learning era 4.0. One of the exchanges

that can be done is the use of learning strategy suitable to characteristic of Accounting material which is Problem Based Learning.

Problem Based Learning is one of innovative learning model that can give the condition of active learning toward students (Mustafa, Sari, & Baharullah, 2019:118). Problem Based Learning Model is centered to the students by using authentic problem, so the students can arrange their own knowledge, develop higher skill, actualize independent attitude, and improve self-confidence (Arends, 2014: 396; Pilomonu, et al, 2020). Meanwhile, Problem Based Learning model also has the purpose to think critically and be able to solve the problem, and develop the students' competence to actively build their own knowledge all at one, so there will be independent attitude in learning and social competence (Hosnan, 2014; Liu, Du, Zhang, & Zhou,2019). Problem Based Learning Model dan be implemented through learning activity at school by using real problem as teaching material, so it can encourage the students to be active, creative, and independent in each learning process.

The previous research related to Problem Based Learning had broken down the benefit and lack of PBL in practical basic learning likes MYOB. The lack of Problem Based Learning could be identified through the long duration and complicated learning, the claim of students' higher creativity and concentration, and the result was dependent to group competence. The process of problem solving that toke time and needed special attention and different age of the students became the other lacks. The points that should be optimized in the implementation of Problem Based Learning are also stated by Timario (2020). They are (1) the need of excellent management which started from planning, implementation, and evaluation; (2) Problem Based Learning needs extra activity of the teacher in the aspect of class management; (3) the needs of strict supervision, and (4) the needs of relevant resource study. So, it is necessary to be with companion teaching materials which are able to help students to work independently and get the guidance of MYOP application programming so they can follow optimal Problem Based Learning activity optimally.

Modul becomes a teaching material which can help the students to do Problem Based Learning activity. It is concerned as a unity of teaching material which is served in self-instructional form. It means that te teaching materials in the form of module can be studied by the students independently. Busingye, J. D., and Najjuma, R. (2015) and Kettunen, J, Mertanen, K, L, Penttilä, T(2013) also explained that module is an intact teaching material and systemically arranged refers to clear and measured learning goals. A module must be functioned as the alternative teacher when there is no face to face activity between the teacher and students. The module is expected to create efficient and effective learning to improve students' learning outcomes. So they can owe high competition before joining working life.

The previous study about the use of module as teaching material in accounting computer subject showed positive result and it potentially improved students learning outcomes. The research conducted by Asmar. etal, (2014) showed that module of Computer Accounting Subject was concerned to be able to create the students to learn independently. Beside that, the research result from Sudarmin, Febu, R., Nuswowati, M., Sumarni, W. (2017) showed module as teaching material can help the students in the process of learning Accounting. The teaching materials made the students were easy to understand material because the module was planned systematically with interesting form and also with evaluation exercise to brain stormed students' understanding.

The theory and research result about the potentiality of Problem Based Learning completed with Accounting module has not been implemented yet in SMK Negeri 1 Wonogiri. The disparity between the previous research with the condition of SMK Negeri 1 Wonogiri is presented by direct observation method. The observation result of learning process showed that teacher centered conventional model was commonly used in learning process in the class. Conventional method became so popular because it was more practice and efficient. The teaching material used at school was also observed. The observation result showed that the teacher had not been implemented the teaching module yet but they only used the material main book. Based on that factual explanation, the observation result showed the less ideas learning process to empower students' thinking ability.

The low learning outcomes becomes a problem that must be solved especially for Vocational School students who are prepared to have competence in working life. The high learning outcomes will convey the knowledge quality and competence of graduated Vocational School students in Indonesia who are ready to work and compete to each others. Rita, N. (2014) explained that learning outcomes is the achievement of behaviour change which is have the tendency to be constant and positive in the aspects of knowledge, attitude, and skills of learning process that is implemented in particular time. In other word, the high learning outcomes alco can be the successful indicator in empowering students' thinking ability along the learning process.

According to problem background the research was conducted to test the effectiveness of Problem Based Learning model with Accounting computer module teaching material toward learning outcomes of SMK Negeri 1 Wonogiri students.

II.   RESEARCH METHOD

1. Population and Sample

The research was conducted in July 2019 until September 2020. The number of population was 184 students of the eleventh grade students of SMK Negeri 1 Wonogiri in academic year 2019/2020. SMK Negri 1 Wonogiri was chosen after observation process, identification of the problem and the allowance from education authorities in Wonogiri. Beside that, SMK Negeri 1 Wonogiri also has computer laboratory with the proper quantity to cover the needs of computer Accounting practice and it also has withinternet network that can be beneficial to the teachers and students to support learning process activity.The sample of this research was done by random sampling technique. Homogeneity test became the first step before taking random sampling in order to observe the similarity of early variant score of each sample class.

2. Research Design

The research employed quasi experimental research. The independent variable was the use of Accounting computer module and Problem Based Learning model. The research design is clearly presented in table 1.
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Table 1. Research Design

Sample Group	Treatment	Data
G_1	PBL Model with Accounting Module (X_1)	Learning outcomes of the students with PBL Model with Accounting Module (G_1X_1)
G_2	Conventional Model (X_2)	Students learning outcomes with PBL Model with conventional module (G_1X_2)

The experiment and control group are selected without the procedure of random assignment. Both of them were treated by pos-test after the treatment. There were experimental class which was given the treatment of Problem Based Learning model with Accounting computer module teaching material and control class with conventional model.

The technique of data collection was technical test as the score of knowledge aspect and non- test as the score of the skill in operating MYOB application. Then the result of data collection was formulated into final score which was analyzed by using hypothesis test. The formula of final learning outcomes was employed in accordance with the regulation of Ministry of Education and Culture of Indonesia. It is presented in figure 2.

$$\text{Learning Outcome (N)} : \frac{(\text{score of knowledge aspect} \times 30) + (\text{score of skill aspect} \times 70)}{100}$$

Figure 2. The formula of Students' Learning Outcome (Ministry of Education and Culture, 2018)

3.   The Technique of Data Analysis

The technique of data analysis in conducting hypothesis test implemented descriptive statistical analysis and inferential statistical analysis. The descriptive statistical analysis was employed to describe the collected data that was the formulation of students' learning outcome after the treatment and it was continued to apply inferential statistical analysis to test the statistical hypothesis of this research. The hypothesis test applied independent test with 5% of significant level.

III.   RESEARCH FINDINGS

The research was conducted in SMK Negeri 1 Wonogiri in academic year 209/2020. The aim of this research is to identify the different effectiveness of Problem Based Learning model with Accounting computer module toward learning outcomes of the eleventh-grade students of Accounting program. The simple random technique was implemented in this research. Class XI AK 1 was the experiment class that involved Problem Based Learning model with Accounting computer module teaching material and XI AK 4 as the control class that implemented conventional model.

Th research was employed in the situation of Pandemic Covid-19, so the research procedure that in the beginning was planned into face to face, it was changed into daring learning strategy. The treatment was implemented through face to face in the form of virtual meeting by zoom virtual meeting application. The presence of the students in both experiment and control classes was monitored by a special regulation that was the requirement to turn the video camera on for each student so the teacher can check whether they attended the virtual class or not. The research data was gotten by post test score of knowledge aspect which were integrated

through google form, and the test of skill was conducted by scoring the video about students' practice when operated MYOB application. Then, they were assigned to upload their videos though their YouTube channel. The obtained data was analyzed by t-test after the treatment as the data of learning outcomes after the learning process that implemented the two treatments were over. T-test was applied to know the average difference form experiment and control classes.

1. **The Learning Outcomes Score of Experiment and Control Classes**
The learning outcomes was a formulation of knowledge and skill scores. The instrument and the working test is completely presented in the attachment. The data collection was employed to control class (XI AK 4) and experiment class (XI AK 1) after posttest.

Table 2. Statistical Descriptive of post-test score in experiment and control classes

Class	Number of Sudents	Lowest Score	Highest Score	Average
experiment	36	81,50	90,10	85,20
control	36	79,80	87,50	83,00

Table 2 showed the average posttest of students learning outcomes of experiment class that applied Problem Based Learning with computer Accounting module, and the control class thatemployed conventional model. The range score of experiment class was 85,50-90,10, whereas in control class got the lowest score was lower than experiment class, it was 79,80 and the highest score was 87,50.
The learning outcomes average score of experiment class had the highest average score that was 85,20. Whereas, the average score in the variable with conventional learning model was 83,00. The students learning outcomes of each aspect is visualized through figure 2.
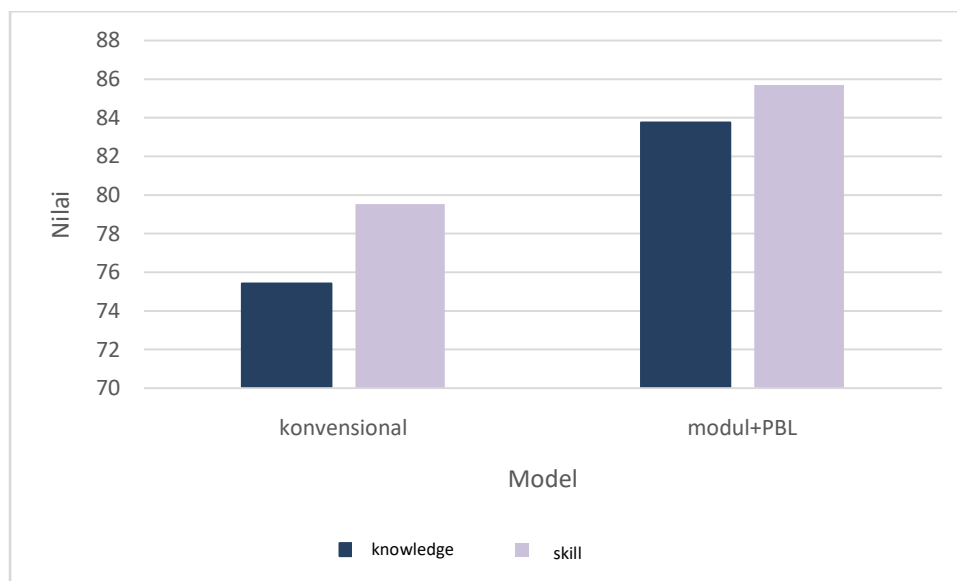
Gambar 2. The average comparison of each aspect of learning outcomes

The Figure 2 showed Problem Based Learning module with teaching material module created the higher learning outcomes than in conventional model both in knowledge and skill aspects had reached higher score than in conventional model. The score after implementation of Problem Based Learning Model with teaching material module in the aspect of knowledge was higher 8,3 points than through conventional model that was 75,4. In the aspect of skill, Problem Based Learning with Accounting computer module showed the higher average score than in conventional model with score difference was 6,16.

1. **Prerequisite Test**
The normality test was needed to measure normal distribution of the data before hypothesis test (Winarsunu, 2002). In this research, the normality test was supported by SPSS 20 application with inference formula if the score of *Sig.* $> 0,05$ so H_0outlined that the data was normally distributed can be accepted. The normality test implemented Liliefors with Kolmogrov-Smirnov formula in the significant level was 5%. The test

decision stated that H_0 was accepted if the score *Sig.* > 0,050. The summary of normality test is displayed through Table 3.

Table3. Normality test result

Variable	Significance Score	Information	Result
Learning Outcomes	0,387	>0,05	Normal

Table 3 showed the result of normality test for students' cognitive learning outcomes data. The result was the significance score from the data with the significant level 5% was 0,387 (sig.> 0,050), so the test decision was the acceptance of H_0.

The requirements of t-test, the data must be normally distributed and homogeneous. Homogeneity test was conducted by Levene's test in the significant level 5% (α = 0,050) supported by SPSS 20 program. H_0 showed the homogeneous data whereas H_1 outlined the data did not show the same variant. The decision tests was stated if the score Sig. > 0,050, so H_0 was accepted. It was vice versa if the score Sig.< 0,050, it was meant the H_0 was rejected.

Table 4. The result of Homogeneity test

Variable	Significance Score	Information	Result
Learning outcomes.	0,521	>0,05	Homogeneous

Table4 showed that sig. score for learning outcomes was 0,521 higher than (sig.> 0,05), so the decision test was the acceptance of H_0 . It can be stated that based on the decision test the learning outcomes data of the students in each class have the same variant (homogeneous).

2. Hypothesis Test

The hypothesis test of this research employed t-test. It was conducted to measure the average difference between control and experiment groups. H_0 stated that there was no average difference between the two groups, while H_1 stated that there was average difference between the two groups. The hypothesis test was supported by SPSS 20. The decision test requirement was H_0 had been rejected so if Sig. < α (0,050), it was vice versa if Sig. > α (0,050), H_0 was accepted. The requirement of t-test was the data must be homogeneous and normally distributed. The result showed that the requirement of t-test was fulfilled, so it can be continued to do the t-test. The description of the t-test is presented completely through Table 35.

Table 5 *Indipendent t-test* of students learning outcomes

Variable	Perlakuan	Average	Significance Score	Conclusion
Learning outcomes	PBL Model with computer Accounting module	85,20	0,000	Significantly different
	Conventional Model	83,00		

Table 5 showed the lower significance score that was 0,05 (*Sig.* (0,000) < 0,050), so H_0 was rejected. According to decision test, it can be concluded that there are significant difference of learning outcomes between control and experiment classes. The difference of learning outcomes showed that Problem Based Learning model with the media computer Accounting module outlined the effective differencewith conventional model toward students learning outcomes of the eleventh -grades students of Accounting program in SMK Negeri 1 Wonogiri academic year 2020/2021.

IV. DISCUSSION

According to effectiveness test of Independent Sample T-Test analysis above, it can be understood that the use of teaching material module of computer Accounting with Problem Based Learning model gives the significant different achievement with conventional model. The result of statistic test of the two average scores of learning outcomes indicates that the experiment class with Problem Based Learning model treatment with computer Accounting module teaching material obtained the higher leaning outcome than in conventional model. The research result has the synergy to the research conducted by Hardani and Ramantha (2020) that concluded that there was significant difference of students learning outcomes before and after learning by using developed interactive teaching material. So, it can be stated that the implementation of teaching material which

can be independently applied to the students can give the big contribution to their succeed in improving learning outcomes of computer Accounting subject.

The research result showed that Problem Based Learning with module teaching material can be more effective to optimize students' learning outcome. The result was indicated by the average score achievement of students' learning outcomes with Problem Based Learning model that was higher than conventional model. Th effectiveness of Problem Based Learning model in this research strengthens the research conducted by Phungsuk, R., Viriyavejakul, C., and Ratanaolarn, T (2017) which outlined the contribution of module as teaching material in developing independent learning and students learning outcomes. This research also continues the research resulted from Swandhana, et al (2016) which outlined the average difference between independent learning and students' learning outcomes among the students who implemented staffing accounting module project basic toward the students who use primary book as teaching material.

The implementation of Computer Accounting of Problem Based Learning model becomes a problem solver to facilitate the students to learn independently at home. The module implementation is proven to be more effective in helping students to understand the subject that was taught conventionally all the times. In line with the previous research that was conducted by Ganefri and Hidayat (2015), module with the material Adjusting Journal Entry of Trading Company with Scientific based on Scientific Approach that had developed properly could be able to help the students in learning and understanding the material independently. The research employed by Prawita, et al (2019) also showed that the innovation of teaching material development and teaching module were able to support the learning implementation by applying curriculum 2013 in providing facilities, learning resources, and proper resources. According to the research result and the synergy to previous research, it can be outlined that the implementation of Computer Accounting module that combined to Problem Based Learning model can improve the quality of Computer Accounting learning so it affects to the optimization of students' learning outcome. That has been proven by the improvement of students' independent learning.

The research problem had been provenby the effectiveness of Problem Based Learning with module to improve students' learning outcomes in Computer Accounting. The effectiveness of Problem Based Learning model compared to conventional model is practiced by the teacher to because of the specialty in every learning cycle, and also the characteristics of Problem Based Learning is in line to the characteristic and indicator of Computer Accounting subject. The characteristic of Problem Based Learning is the students' involvement directly in learning process, the problems that are conveyed by the teacher in the beginning, then the students step by step try to solve the problem by analyzing and demonstrating the solution by using application. Inn other words, the benefit of Problem Based Learning is to improve procedural understanding and students' skill.

The steps of Problem Based Learning model have the synergy character toward Computer Accounting subject. Problem Based Learning obliged the students to convey the goals and make preparation to join learning process (establishing set), demonstrate the knowledge and skill (demonstrating), guided practice, give feedback. do the training continually and implement periodically (extended practice). The steps are in accordance with the characteristic of Computer Accounting subject which is processing systematically. Based on that characteristic, the implementation of Problem Based Learning model can reach the indicator from ability in the aspects of knowledge and skill in the material of purchase and sales entry transaction of service company to MYOB application.

The combined module in the implementation of Problem Based Learning model is very helpful to help the students to reach succeed learning indicator from the aspects of knowledge and skill. The computer accounting module is implemented in the step of demonstrating the knowledge and skill owned by them to solve the problem conveyed by the teacher. The students use module as the step guidance of MYOB implementation, so the procedural understanding of the students can be facilitated. The synchronization of problem solving and application module as guidance affected the students easiness in solving the cases because they can have brief description and procedure of operating MYOB application correctly.

V.   CONCLUSION

According to the research result bout the influence of Problem Based Learning model with Computer Accounting module as teaching material toward the students leaning outcomes of the eleventh-grade students of SMK Negeri 1 Wonogiri, the conclusions are (1) the result score of independent t-test showed significance was 0,000 (<0,05), so it can be concluded that there is significance difference of Problem Based Learning model with computer accounting module teaching material with conventional learning model toward the student's learning outcomes of the eleventh-grade students of Accounting program in SMK Negeri 1 Wonogiri; (2) Problem Based Learning model with computer accounting module as teaching material is potential to improve the students' learning outcome became higher with the average score 85,11 than in conventional model with average score 78,29.

VI.   ACKNOWLEDGEMENTS

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