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Improving Performance Skills (Performance) Students of Class X TKJ SMK Swasta Mandiri Al Washliyah Silangkitang on Statistical Material Using a Problem Based Learning (PBL)

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ABSTRACT
By applying the issue put together learning model with respect to material measurements, it is expected to further develop the learning results of arithmetic understudies in class X-TKJ SMK Swasta Mandiri Al-Washliyah Silangkitang semester II of the 2022/2023 scholarly year. A similar gathering was directed in each pattern of the two patterns of class activity research. A sum of 33 understudies from class X-TKJ became the examination subjects. The information examination strategy utilized spellbinding correlation between Cycle I and Cycle II using the percentage of math learning results. In view of the aftereffects of the review, advancing by using the Issue Based Learning (PBL) learning model can further develop understudies learning results on the measured material in mathematics subjects. The consequences of the primary pattern of understudies who finished 22 or 71% were pronounced passed. After enhancements were made in the execution of cycle II, there was an increment, in particular 30 or 88% of understudies who finished. This study was deemed successful due to its success in achieving classical completeness in less than 85% of students with KKTP 75.

Introduction

Education is an effort to help the souls of students, both in real and in depth, from their ordinary nature towards better human progress. Education is an important consideration for increasing human asset expectations. Training is an effort to create a learning climate and educational experience with the aim that students effectively grow their ability to have the strength, calm, character, insight, noble ethics, and abilities needed by themselves and society (Rahman et al., 2022). The Father of Indonesian National Education, Kihajar Dewantara, advised that education is a prerequisite for the growth and development of the younger generation, education guides every natural trait that exists in children, both natural traits and current thinking, so that they as a society and as citizens can achieve a level of security and the most significant joy. In current conditions, schools as educational institutions have an obligation to direct and develop the abilities of each student. Therefore, education in schools must be better. One of them is by implementing new programs/curriculum, especially the independent curriculum which is deemed to be in accordance with educational guidelines in Indonesia. An educational plan is a pre-customized plan of illustrations, learning materials, learning experiences. The educational program becomes a reference for every teacher in carrying out education and developing their experience. One educational program that demands student autonomy is the independent learning program/curriculum. The freedom that every student has to access knowledge obtained from both formal and non-formal education is called independence. According to Rahayu et al (2022), the independent

curriculum is seen as a learning procedure that provides children with the opportunity to learn while having fun, free from pressure and tension, and shows their capacities. In an independent curriculum, students are not limited by the idea of learning that occurs both at school and outside school, but requires imagination from both teachers and students. Eko in (Manalu et al., 2022) stated that the presence of an independent curriculum means answering the difficulties of education in the modern era 4.0, where in its implementation it must uphold students' abilities to think firmly and critically. thinking, imagination and development, as well as the ability to instill and collaborate. Student learning outcomes indicate learning success, regardless of whether the process has changed. Learning outcomes are changes in behavior that occur after following educational experiences and develop according to educational goals (zebua, 2019). The motivation behind evaluating learning outcomes is to view and survey developing experiences, further develop student learning outcomes and continuous learning progress. Several influencing factors, such as students' lack of enthusiasm in participating in classroom learning and educators' lack of preparation in teaching, have an impact on how well students' learning outcomes are. The activities that students participate in are also influenced by the teacher's readiness in preparing the lesson. Instead, dynamic learning exercises can help students to find out more and grow their ability to develop their own abilities. Learning outcomes are very important in learning experiences because learning outcomes provide information to educators about how well students act in accordance with learning objectives that will be tested in subsequent teaching and educational experiences.

In national education, Mathematics is one of the main lessons taught at every level of education. One field of study that is very important in the education system and everyday life is mathematics. Students can train their ability to think fundamentally, consistently, imaginatively and reason by concentrating on science, which will also prepare them better to face difficulties, in real life (Tanjung, 2018). "The mathematics learning process begins with handling problems or posing real problems, namely learning related to students' daily lives," according to Setiawan (2017). "Students are then guided in stages to master mathematical concepts by involving students' active role in the process". However, in general, students' mastery and understanding of mathematics is still lacking. Because mathematics is still seen as a fairly difficult and quite troublesome subject by students, many students get The learning outcomes are not good, this is because there are still many students who have not mastered the basic concepts of mathematics themselves. From the results of observations and interviews with mathematics teachers at Al-Washliyah Silangkitang Private Vocational School, it can be seen that students tend to be silent during the mathematics learning process. Passive, and when students encounter difficulties, they feel embarrassed and hesitate to ask the teacher, so the learning process only depends on the teacher. In statistics material, student learning outcomes are still low seen from the results of individual tests in class. Meanwhile, as many as 52% or 17 students did not arrive at the KKTP. Learning is expected to be successful if classical completion reaches $\geq 85\%$ of all students with a KKTP ≥ 75 determined at school. So that student learning outcomes can improve in accordance with the expected goals, it is necessary to select learning models that are more varied and take into account the dynamics of student work. According to Oktavia (2020) a learning model is a type of discovery that is described from beginning to end which is generally introduced by educators in the right (usual) way in coordinating learning exercises to achieve learning goals. One of the learning models used to further develop student learning outcomes and according to the independent curriculum education plan is the Problem Based Learning (PBL) model. Problem Based Learning (PBL) is a learning approach where students focus on real problems and are determined to organize their own insights, create demands and reasoning abilities that cannot be denied, creating freedom and courage (Fajarwati and Arcana, 2018). Students can use this model to analyze problems, find solutions, collect data, analyze and find solutions in groups. The advantage of Problem Based Learning (PBL) according to Zainal (2022) is that students can apply their insights in the real world by focusing on understanding, developing critical thinking skills to be more dynamic, and practicing firm and critical reasoning and problem solving abilities. From the facts above, it shows that researchers are interested in conducting research entitled "Improving Performance Skills (Performance) Class X-TKJ AL-Washliyah Silangkitang Private Vocational School". The aim of this research is to describe the learning outcomes of class X-TKJ at the Independent Private Vocational School AL-Washliyah Silangkitang.

Research Methodology

This exploration is very necessary in Classroom Action Research (PTK) which uses the Problem Based Learning (PBL) learning model with two cycles and one meeting per cycle to further develop students' mathematics learning outcomes. Classroom Action Research (PTK) was first put forward by an American social doctor named Kurt Lewin in 1946. According to Sitorus (2002), Classroom Action Research (PTK) is defined as self-reflection-based research carried out by teachers in their own classes. with the aim of improving performance and improving the quality of student learning outcomes. Meanwhile, according to Ananda (2019), Classroom Action Research (PTK) is an effort to explore the nature of learning in the study room through the implementation of certain cycles. Exploration of study room activities can be done alone or together. With an emphasis on strategy, implementation and preparation of PTK reports. This exploration was carried out at the Al-Washliyah Silangkitang Private Vocational School in the second semester of the 2022/2023 academic year from April to May 2023. A total of 36

class X-TKJ students were the subjects of this research. Consisting of 17 men and 19 women. This research was divided into two cycles, with one meeting each cycle. The data sought in this research relates to activities that are chosen to further develop student learning outcomes in mathematics subjects, especially in statistics material. The type of instrument used to collect information in this exploration is a trial of student learning outcomes. This ability test is an exploratory instrument to assess students' abilities in managing problems with student learning outcomes in statistics material. Learning outcome tests consist of individual tests given at the end of each meeting. The learning outcomes test given is descriptive in nature with a total of 4 descriptive questions which are completed after implementing Problem Based Learning (PBL) learning.

The stages in directing classroom activity research include arranging activities, carrying out activities, paying attention to and assessing the cycle and consequences of activities (perception and assessment), reflection, and so on until improvements or improvements meet achievement measures (Susilawati, 2018). The initial stage in carrying out research activities is compiling/planning. Its preparation depends on three fundamental standards, namely problem formulation, problem identification, and critical thinking. When the problem formulation and elective settings have been selected, then the preparation of exploration instruments and examples of educational plans can begin. The next stage is carrying out activities specifically by carrying out what has been arranged in the previous stage, especially acting in class. Research activities must be completed according to the procedures that have been implemented in this implementation. Tools to determine the extent of the influence of an action are used at the observation stage. Reflection is a phase to look back at activities that have been carried out. The reflection stage is followed by the model educator and audience instructor. The progress of this exploration must be seen from the increase in learning outcomes achieved by students according to classical completeness $\geq 85\%$ of all students with the rules for achieving learning goals (KKTP) set by the school, especially obtaining individual scores ≥ 75.

Results and Discussion
Cycle I
1. Planning

   By utilizing the Problem Based Learning (PBL) model in statistics material, especially the data distribution sub-subject, preparation in cycle I begins with planning with the observing teacher regarding learning implementation strategies and continues with preparing learning tools consisting of Teaching Modules. Student Worksheets (LKPD) and individual exam sheets at the first meeting. The following is the activity plan implemented in cycle I.
   a) Plan the material that will be introduced to students
   b) Create and develop learning plans by involving facilities in the Problem Based Learning (PBL) learning model
   c) Plan and compile the research instruments that will be used.

2. Implementation

   Cycle I was held on Thursday 4 May 2023 in class X-TKJ of Al-Washliyah Silangkitang Private Vocational School, which was attended by 33 students. Educational and learning exercises begin with an explanation, especially greetings and checking students' interest. The teacher conditions the class, provides apperception and inspiration to students about the importance of focusing on statistical material in everyday life. As an initial step in the learning process, the teacher guides students' understanding of the problem in the next activity. The teacher then divides the group into seven groups and conducts a question and answer session while students observe the problem presentation. In the closing activity, the teacher and students together draw conclusions regarding the learning process that has been carried out and distribute evaluation questions which are used to see how well students fulfill the material.

3. Observation

   In each learning process, students' learning outcomes are observed, using individual tests which are used as a result of evaluation of the learning process carried out. By using *the Problem Based Learning* (PBL) model. The following are the details found based on cycle I data analysis.

Table 1. Distribution of Completeness of Cycle I Mathematics Learning Results

No	Completion Standards		Frequency	Percentage
	Mark	**Note**		
1	75 – 100	Complete	22	71 %
2	0 – 74	Not Completed	11	29 %
Amount			33	100%
Maximum Value			100	
Minimum Value			50	

		Average	74.68	

From the data obtained by students in the implementation of cycle I regarding student learning outcomes presented in table 1, it shows that the learning outcomes of students who took individual tests, as many as 22 students were able to meet the KKTP, while 11 students were still below the KKTP. With the average class score obtained by students being 74.68, with the highest and lowest scores for students being 100 and 50. Classical completeness in cycle I, namely 71%, is far from the set classical completeness of 85%.

4. Reflection

The implementation of the first cycle of learning ends with reflection activities with the teacher and students regarding the educational experiences that have been carried out. The results of the reflection obtained were that students took too long to form groups, complete group assignments, and complete individual assignments, and there were several students who did not follow the LKPD work process. At the end of the results of this reflection, it is hoped that there will be further efforts to further develop student learning outcomes in mathematics learning. Therefore, at the next meeting (Cycle II), the learning process will be carried out by applying a similar learning model but with a different grouping strategy. It is hoped that student learning outcomes will increase if Cycle II is implemented at the next meeting.

Cycle II

1. Planning

The implementation of Cycle II can be completed by considering students' perceptions of training and the learning outcomes of Cycle I. Disadvantages in Cycle I include students not being ideal in following this mindset and being busy with their own training, which takes too long. forming meetings, completing group assignments, lack of interest in learning exercises, and students' understanding of the material has not yet met the KKTP target. The following is the activity plan implemented in Cycle II:

a) Prepare material to introduce to students.
b) Utilizing the steps of the Problem Based Learning (PBL) learning model, develop a learning plan based on the results of the Cycle I evaluation
c) Prepare and compile the instruments that will be used for the assessment.

2. Implementation

The implementation of Cycle II continues to follow the Problem Based Learning (PBL) learning model which is completed in one meeting. This meeting was held on May 6 2023 with 33 class X-TKJ students at SwastaMandiri Al-Washliyah Silangkitang Vocational School as participants with the subject of Statistics . The learning exercise begins with a presentation which includes welcoming and checking students' attendance, the teacher sets the class atmosphere, raises students' enthusiasm and helps them understand the importance of studying statistics in everyday life. At this stage, the teacher provides learning according to the steps of the Problem Based Learning (PBL) learning model. The teacher's first activity is to introduce students to the problem of using statistics. After the students see the problem presentation, the teacher carries out a question and answer activity, then the teacher divides the students into 9 groups, each group has 4 students with different abilities. During work on the LKPD, each group worked on two different types of questions. This is done as an option so that each group can concentrate and follow the LPKD work process. In the next step, students introduced the results of their conversation in front of the class and received extraordinary reactions from various parties. In the final stage the teacher and students together make conclusions based on the learning experiences that have been completed and appropriate assessment questions that are used to see how well the students understand the material.

3. Observation

Based on data analysis, there was an increase in student learning outcomes in Cycle II learning when compared with student learning outcomes in Cycle I.

Table 2. Distribution of Completeness of Cycle II Mathematics Learning Results

No	Completion Standards		Frequency	Percentage
	Mark	**Note**		
1	75 – 100	Complete	30	88 %
2	0 – 74	Not Completed	3	12 %
Amount			33	100%
Maximum Value			100	
Minimum Value			55	
Average			90.97	

Information on student learning outcomes in Cycle II is presented in Table 2. It turns out that there was an increase in learning outcomes for 33 students who took part in the learning outcomes assessment. A total of 30 students were able to fulfill the KKTP, while 3 students did not meet the KKTP, with an average class score of 90.97, with the highest and lowest student scores being 100 and 55. In Cycle II there was an increase in classical completion of 88%. target 85%.

4. Reflection

The implementation of Cycle II ends with reflection exercises on all educational and learning exercises. The findings from the reflection results show that students follow the learning smoothly, students look dynamic in completing LKPD, students learn more and are more energetic in answering and responding to the results of presentations made by other groups. The reflection carried out results in the conclusion that student learning outcomes are Mathematics learning has increased.

Considering the consequences of the activities that have been carried out, there has been an increase in student learning outcomes through the problem based learning (PBL) model in mathematics lessons with the subject matter of statistics. The following tables and diagrams provide an analysis of the completeness of student learning outcomes in Cycles I and II.

Table 3. Comparative Analysis of Completeness of Mathematics Learning Outcomes for Class X-TKJ Students

No	Completeness	Cycle I		Cycle II	
		F	%	F	%
1	Complete	22	71 %	30	88 %
2	Not Completed	11	29 %	3	12 %
	Amount	33	100%	33	100%
	Maximum Value	100		100	
	Minimum Value	50		55	
	Average	74.68		90.97	
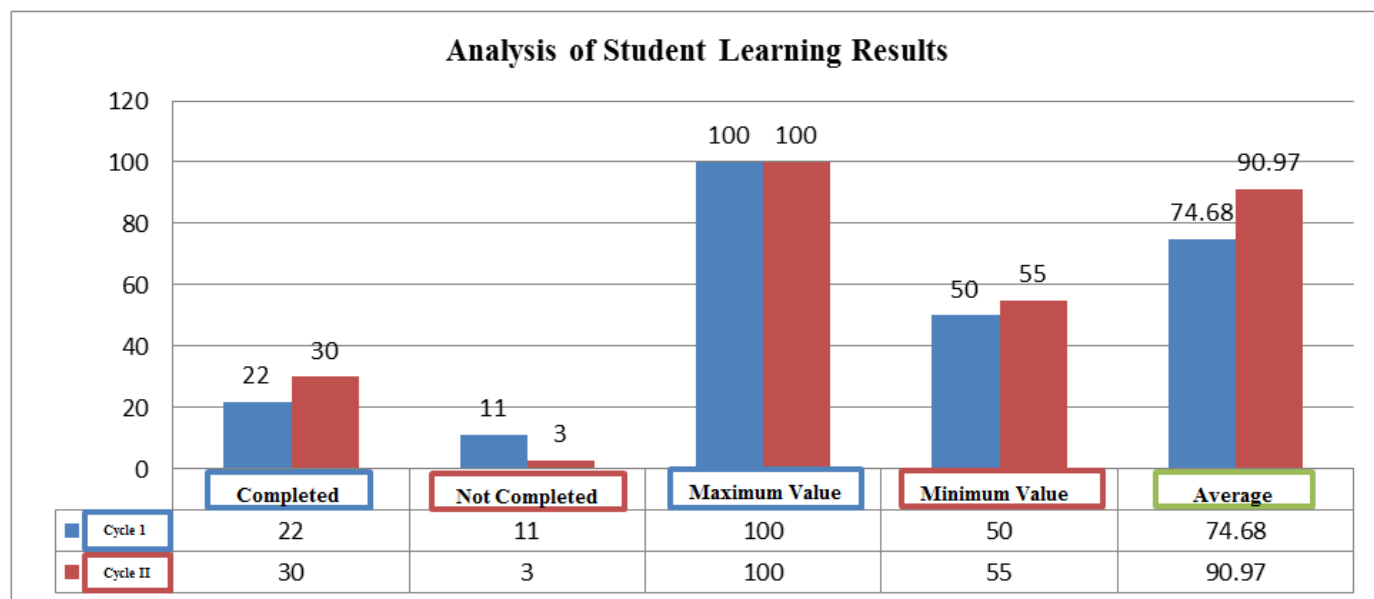
Picture 1. Comparative Analysis of Completeness of Mathematics Learning Results for Class X-TKJ

Looking at Table 3 and Figure 1, it can be assumed that after improving the stages of the Problem Based Learning (PBL) model, there was an increase in class learning outcomes on average by 71% and the number of students who did not complete was 11 with a level of 29% and the highest score in Cycle I is 100 and the least value is 50 and the normal value is 74.68, the results from Cycle I do not meet the old style peak point, especially 85%. Therefore improvements were made in Cycle II. After the implementation of Cycle II, there was an addition, namely 30 students who completed with a level of 88%, while 3 students who did not complete with a level of 12%, and the one who got the highest increase in score was 100 and the smallest score was 55 and the normal score was 90 .97. Furthermore, working on the stages of the Problem Based Learning (PBL) model is expected to achieve success because it has reached classical completeness, namely 85%.

Conclusion

Considering the impact of exploration and discussion activities on the use of the Problem Based Learning (PBL) model in Class . level of 29% and the highest value in Cycle I is 100 and the lowest value is 50 and the normal value is 74.68, the consequences in Cycle I cannot yet be achieved. meets traditional compliance, specifically 85%. In line with this, improvements were made in Cycle II. After the implementation of Cycle II, there was an addition, namely 30 students who completed with a level of 88%, while 3 students who did not complete with a level of 12%, and the one who got the highest increase in score was 100 and the smallest score was 55 and the normal score was 90 .97. Utilizing Problem Based Learning (PBL) steps can further develop Mathematics learning outcomes in statistics material in class provided by the teacher; (2) students answer problems effectively; (3) student seating is not entirely regulated by the educator; (4) students characterize and sort their tasks related to the problem; (5) students collect data and information needed for critical thinking; (6) Groups of students make reports, present them in front of the class, and discuss them.

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