



Creative Problem-Solving Learning Model to Improve Student Activeness and Learning Outcomes in Entrepreneurship Creative Product Subject

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ABSTRACT

To overcome this problem, a study was conducted using the Creative Problem Solving learning model to increase student activeness and understanding in learning. This study aims to determine whether or not there is an increase in student activity and learning outcomes. This type of research is Classroom Action Research which is conducted in two cycles. Each cycle consists of four stages, namely planning, implementing, observing, and reflecting. The success indicators determined were the average score of the student's activeness level reaching $\geq 75\%$ and the percentage of classical completeness of students in the class reaching $\geq 75\%$. The results showed that there was an increase in student activeness and learning outcomes, this is evident from the percentage of classical student completeness from the pre-cycle which was only 22% increased to 63% in cycle I and again increased in cycle II reached 88%, while the percentage of observation results The activeness of students in the first cycle reached 67% then increased in the second cycle to 83%. Based on the results of research and discussion, it can be concluded that there is an increase in student activeness and learning outcomes after the application of the Creative Problem Solving (CPS) learning model in the subject of computer assembly, basic competence in understanding the disassembly procedures of computers and presenting the results of assembling computers.

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1. INTRODUCTION

Education is a dynamic force in the life of every individual, which affects their physical development, mental power (reason, taste, and will), social and morality. In a narrower sense, education is all planned activities with organized materials, carried out on a scheduled basis in a supervisory system and given an evaluation based on predetermined goals.

Teaching and learning activities are the main activities in the entire educational process in the classroom. The success of achieving educational goals depends a lot on the quality of the implementation of the teaching and learning process. The teaching and learning process in schools is greatly influenced by the activities or methods and methods used by the teacher. Educational methods are ways used by a teacher or group of people to guide children or students according to their development towards the goals to be achieved.

In the teaching and learning process at school, many obstacles often arise both from the students and the teachers as educators related to the learning model applied. Based on observations made by researchers, the problems faced in learning in the Multimedia (MM) department of SMK Negeri 2 Bandung are that learning still uses a lecture learning model which is relatively easy and simple to implement.

This causes the learning process in computer assembly subjects students tend to be passive, such as the lack of students' desire to ask questions, students still feel less confident in doing practice, students are not brave when told to present in front of the class to present the results of practice, lack of communication with teachers and friends, so that student learning outcomes are low, this can be seen from the results of the average UAS score in semester 1 of 54.95. Of the 32 students, only 15 or 46.87% of students reached the KKM (Minimum Completeness Criteria).

In solving these problems, it is necessary to apply innovative learning strategies, one of which is by applying the Creative Problem Solving learning model. The Creative Problem-Solving learning model is a learning method that focuses on teaching and problem-solving skills, followed by strengthening skills (Dewi *et al.*, 2019). The advantages of the Creative Problem-Solving learning model are (1) encouraging students to be more active in the learning process, (2) can foster student curiosity, (3) train students' thinking skills in solving problems, (4) foster cooperation and interaction between students.

Some research on Creative Problem Solving learning models include research conducted Application of Creative Problem Solving (CPS) Model to Increase Interest and Chemical Learning Outcomes on Thermochemical Subject Matter of Class XI.IA2 SMA Negeri Colomadu in 2016/2018 Academic Year, showing that the learning model can increase student interest and learning outcomes.

Then the research conducted by M. Arifin Siregar (2013) "Application of Creative Problem Solving Learning Model to Improve Activity and Accounting Learning Outcomes of Students of Class XI IS 1 SMA Swasta Al-Maksum Medan Learning Year 2010/2011", shows that the learning model can improve student activity and learning outcomes. By applying the Creative Problem Solving learning model, students will be more active and creative in solving problems encountered in learning, can increase students' memory of the learning material that has been delivered, students better understand the content of the material taught because students are directly involved in the learning process so that student learning outcomes will increase.

The purpose of this study was to determine whether the Creative Problem Solving learning model can increase student activeness in the computer assembly subject of class XI MM 1 SMK Negeri 2 Bandung and to determine whether the Creative Problem Solving learning model can improve student learning outcomes in the computer assembly subject of class XI

MM 1 SMK Negeri 2 Bandung. Based on the description above, the author wishes to conduct research with the title "Creative Problem Solving Learning Model to Increase Student Activeness and Learning Outcomes in Entrepreneurship Creative Product Subjects Class XI MM 1 SMK Negeri 2 Bandung".

2. OVERVIEW

2.1. Definition of Teaching and Learning Process

The teaching and learning process is a purposeful process. This goal is a change in behavior that students after completing their learning experience. According to (Suhaida, 2022) that learning is an effort process carried out by a person to obtain a new change in behavior as a whole, because of his own experience in interaction. Also suggest that learning is an important process for changing everyone's behavior and that learning includes everything a person thinks and does. Learning is influenced by various factors such as the material being studied, instruments, the environment, and the condition of the individual learning.

2.2. Factors Affecting the Teaching and Learning Process

The learning outcomes achieved by students are influenced by two main factors, namely internal factors and external factors. These factors can be explained as follows:

2.2.1 Factors Internal

Internal factors are factors that exist within the individual who is learning, internal factors consist of several factors, including:

2.2.1.1 Physical factors

In this physical factor, there are two factors that greatly affect the learning process of students, namely health factors and body defects. A person's learning process will be disrupted if that person experiences health problems and physical body disorders or defects.

2.2.1.2 Psychological factors

There are several factors included in the psychological factors that affect the student learning process. These factors are as intelligence, attention, interest, talent, motive, maturity, readiness.

2.2.1.3 Fatigue factor

Fatigue in a person can be divided into two types, namely physical fatigue and spiritual fatigue (psychological). Physical fatigue is seen with the weakness of the body and the tendency to rest, while spiritual fatigue can be seen with boredom and lethargy so that interest and motivation to learn are reduced.

2.2.2 Factors External

External factors are factors that exist outside the individual who is learning. These external factors consist of:

2.2.2.1 Family Factors

The family is the first and main educational institution for everyone. The family has a very important role for children's education, a harmonious family atmosphere, and the way parents educate their children greatly affects the child's learning process.

2.2.2.2 School Factors

School factors are one of the external factors that affect the student learning process namely teaching methods, curriculum, teacher-student relations.

2.2.2.2 Community Factors

Society is an external factor that affects the student learning process. In society there are many things that can affect the learning process of students such as the media, friends hanging out, forms of community life.

2.3. Creative Problem-Solving Learning Model

The Creative Problem Solving (CPS) learning model is a learning method that focuses on teaching and problem-solving skills, followed skill reinforcement (Dewi, 2019). The benefits of cooperative learning model of group investigation type can improve students' learning outcomes if carried out in accordance with the existing rules. Learning using the cooperative learning model of group investigation type can also improve students' social relations in the classroom, be able to train good cooperation with their groups, increase self-confidence, foster the relationship of students' needs in their groups in finding materials to processing materials with their groups.

2.4. Framework of Thought

Entrepreneurship Creative Product subject is one of the subjects that has a moderate level of difficulty, but if the teacher is less creative in delivering the material, it will be difficult for students to accept (Mihardi *et al.*, 2013). Based on observations, the delivery of material in the teaching and learning process at SMK Negeri 2 Bandung still uses a lecture learning model, this causes learning to be less interesting, students find it difficult to understand the material presented, and students are less active in learning so that student learning outcomes are low.

This can be seen from the students' UAS results which show that out of 32 students only 15 or 46.87% of students reached the KKM (Minimum Completeness Criteria). The above problems are caused by teachers who are less precise in choosing a learning model that is in accordance with the competencies to be taught so that learning outcomes are low. One solution that can be used to overcome these problems is to use the Creative Problem-Solving learning model (Umara, 2022). The Creative Problem-Solving learning model is a learning method that focuses on teaching and problem-solving skills, followed by strengthening skills. When faced with a question and problem, students can perform problem-solving skills to select and develop their responses.

3. METHODS

The research method is the method used by researchers in collecting their research data. The method used in this research is Classroom Action Research (PTK). Suharsimi, Arikunto also explained, Classroom Action Research (PTK) in science is called classroom action research (Tucker & Grim, 2016). This class action research was conducted at SMK Negeri 2 Bandung

which is located at Jl. Ciliwung - Bandung City, West Java. This research was conducted in the odd semester of the 2020/2021 school year.

The subjects in this study were students of class XI MM 1 SMK Negeri 2 Bandung in the 2020/2021 school year with a total of 37 students consisting of 14 male students and 18 female students. Data collection in this study was carried out through tests and observations. The research instrument is one of the factors that determine the quality or not of the writing carried out, because the instrument is a measuring tool used by the author in conducting research. Research instruments are tools or facilities used by researchers in collecting data so that their work is easier, and the results are better, in the sense that they are more careful, complete, and systematic so that they are easier to process (Tucker & Grim, 2016).

The understanding of students in class XI MM SMK Negeri 2 Bandung is based on the acquisition of the average value of the student learning test results and the percentage of completeness that has been adjusted to the KKM which is 75. Observations were made by directly observing student activities and behavior. Before the observation, the author and the observer discussed the observation guidelines so that the observation activities could be carried out objectively and the data obtained were as expected.

Observations were made from the beginning of the learning activity until the teacher closed the lesson. The level of success in this class action research is characterized by changes towards improvement. Classical completeness in this study is 85% for all aspects of assessment. This class action research was carried out for two cycles. The research procedure was carried out through the stages in the class action research cycle. In the two cycles planned, four stages of classroom action research (Nurkhin & Pramusinto, 2020), who argued as follows "Classroom action research is carried out through a dynamic and complementary process consisting of four essential moments, including planning, acting, observing.

4. RESULT AND DISCUSION

This Classroom Action Research (PTK) will produce new findings from each cycle that has been implemented. The purpose of this research is to find out the shortcomings of each lesson that has been implemented. Therefore, that the results of these findings can be known the shortcomings of each lesson delivered to students and make plans and implementation of improvements made by the teacher.

Before the research was conducted, students' understanding of the PKK Productive subject (Entrepreneurial Creative Products) was still relatively low. This is caused by students' lack of interest in the subject. In addition, the selection of media and learning group investigation learning models that are not in accordance with the material to be studied. Students easily feel bored during the learning process because the teacher only uses lecture media. So that student activeness does not dominate.

The following is the student understanding obtained by students without using the Creative Problem-Solving learning model before research in **Table 1**. Based on **Table 1**, the average student understanding obtained by students of class XI MM SMK Negeri 2 Bandung is 64.26 with a percentage of completeness of 29%. Of the 35 students, only 10 students reached the predetermined KKM score. This value shows the need to increase the value of student understanding by conducting Classroom Action Research (PTK) using different media, namely by applying the Creative Problem-Solving learning model.

Table 1. Percentage of students' comprehension completion at pre-cycle.

Description	Number of Students	Percentage
Completed	12	29%
Not Completed	25	71%
Total	37	100%

4.1. Research Results

4.1.1 Cycle 1

As a follow-up to the learning process and the scores obtained by students in improving students' understanding in very low initial conditions, the researchers carried out the cycle I learning process. In accordance with the specified schedule, the cycle I learning process was carried out on Wednesday, October 6 and 13, 2020. Cycle I in this study went through four stages of activities, namely planning, revision of learning activities that have been carried out as shown in **Table 2**.

Table 2. Percentage of student comprehension completion in cycle I.

Description	Number of Students	Percentage
Completed	25	66%
Not Completed	12	34%
Total	37	100%

Based on the **Table 2**, student understanding obtained by students of class XI MM SMK Negeri 2 Bandung has increased. The average score obtained by students reached 74.26 with a percentage of completeness of 66%. Out of 37 students, there are 25 students who have reached the KKM score.

The percentage of students' understanding completeness is included in the good criteria, but the scores obtained have not reached the KKM value and the percentage of completeness that has been determined. In addition, indicators of student learning outcomes were also observed during the learning process. Indicators of student learning outcomes observed include three indicators, namely cognitive, affective, and psychomotor in **Table 3**.

Table 3. Percentage of student understanding completion in cycle I.

Description	Total	SMI	Percentage
Cognitive	87	140	62%
Affective	87	140	62%
Psychomotor	88	140	63%

The **Table 3** shows that the indicators of student understanding of class XI MM students of SMK Negeri 2 Bandung during cycle I activities are in good criteria with a percentage of completeness of 62%. The percentage of cognitive students reached 62%, affective students reached 62% and psychomotor students reached 63%. In cycle I activities, indicators of student understanding need to be improved.

4.1.2 Cycle 2

Learning activities in cycle II are the same as learning activities in cycle I. Cycle II was carried out on Wednesday, October 20 and 27, 2020. Cycle II in this study went through four stages of activities, namely planning, revising the learning activities that had been carried out in **Table 4**.

Table 4. Percentage of students' comprehension completion in cycle II.

Description	Number of Students	Percentage
Completed	33	89%
Not Completed	4	11%
Total	37	100%

Student understanding obtained by students in cycle II using the group investigation learning model has increased. The average understanding of students became 80.66 with a percentage of completeness of 89%. There are 33 students out of 37 students who have reached the predetermined KKM value. This shows that the value obtained by students is already in very good criteria.

In cycle II indicators of student learning comprehension were also observed. The indicators of student understanding that were observed were the same as the indicators of student understanding in cycle I, namely cognitive, affective and psychomotor. The following indicators of understanding in cycle II activities can be seen in **Table 5**.

Table 5. Percentage of student understanding completion in cycle II.

Description	Total	SMI	Percentage
Cognitive	124	140	89%
Affective	124	140	89%
Psychomotor	124	140	89%

Based on the **Table 5**, the indicator of students' understanding in cycle II has increased to 89%. Cognitive students reached 89%, affective students increased to 89% and psychomotor students to 89%. This shows that there is a good influence by using the Creative Problem-Solving learning model on students' understanding indicators during learning activities.

This Classroom Action Research (PTK) which was conducted through two cycles was conducted to determine whether the use of Creative Problem-Solving learning model can improve students' understanding in class XI MM SMK Negeri 2 Bandung. This research took place over two cycles. The increase in students' understanding based on pre-cycle, cycle I and cycle II is shown in **Table 6**.

Table 6. Student Understanding in Pre-Research, Cycle I and Cycle II

Description	Pra Cycle	Cycle I	Cycle II
Completed	29%	66%	89%
Not Completed	71%	34%	11%

Based on **Table 6**, the scores obtained by students increased after the learning process using the group investigation learning model with a percentage of completeness in cycle I 66% and cycle II 89%. Thus, the use of the Creative Problem-Solving learning model can improve student understanding in class XI MM SMK Negeri 2 Bandung. For more details can be seen from **Figure 1**.

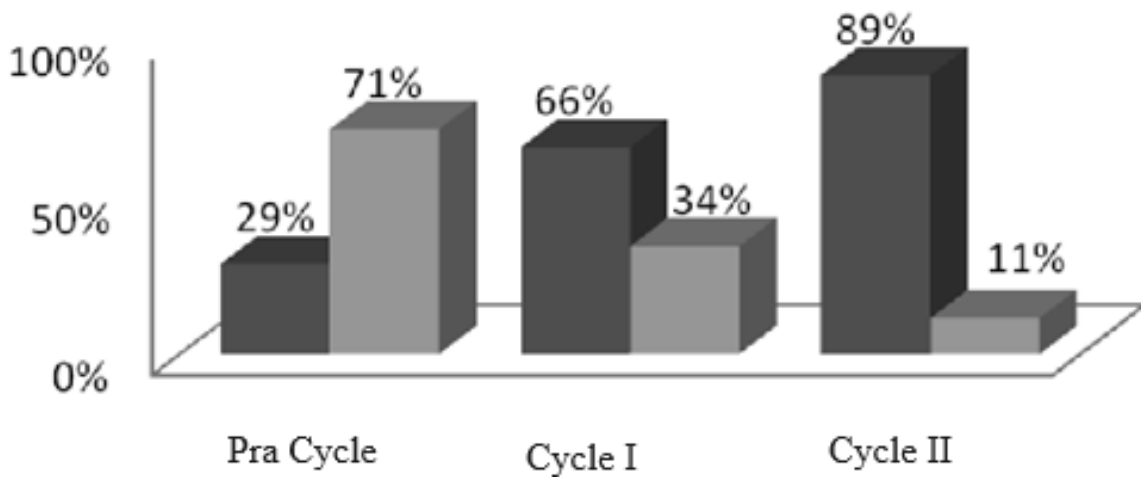


Figure 1. Diagram of student understanding at pre-cycle, cycle I and cycle II.

In addition, indicators of student understanding were also observed during the learning process. Indicators of student understanding of learning that were observed included three indicators, namely cognitive, affective and psychomotor. By using the Creative Problem-Solving learning model, students' understanding indicators also increased. In cycle I, the indicator of student understanding reached 62%, while in cycle II activities the indicator of student understanding increased to 89%. The increase in student understanding indicators can be seen in Figure 2.

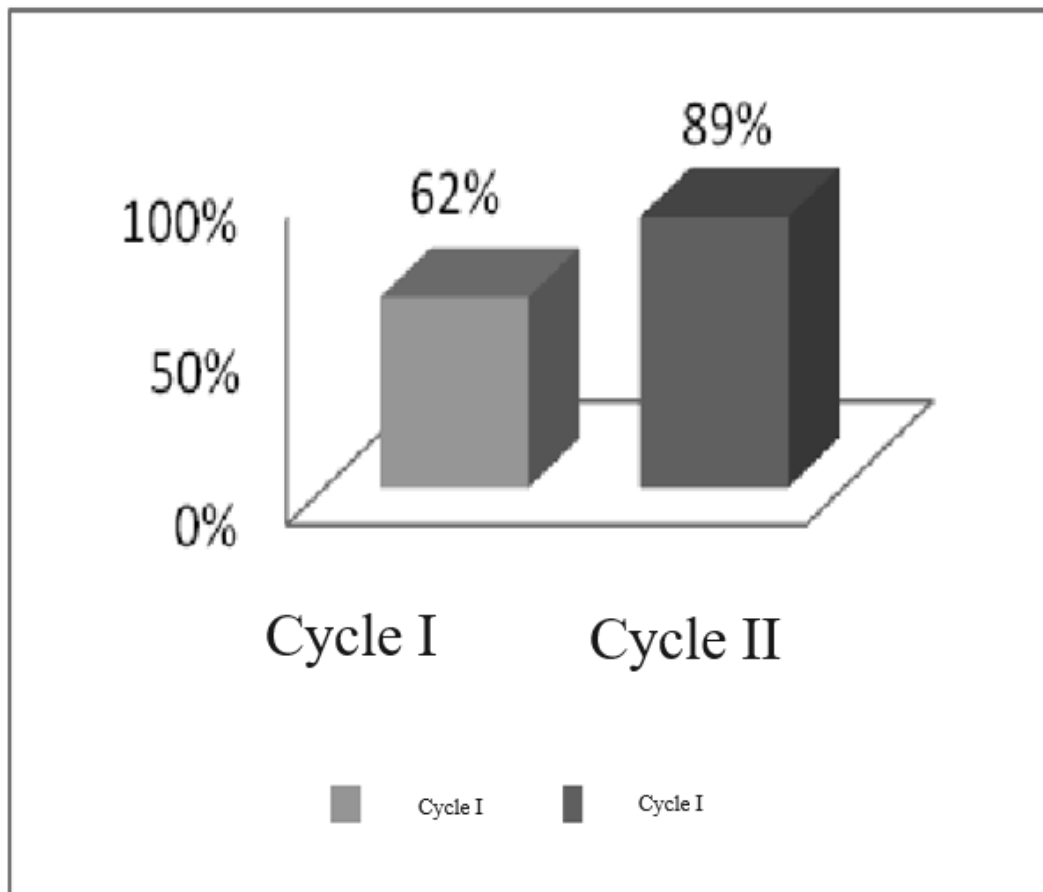


Figure 2. Percentage diagram of comprehension indicators of students in class XI SMK Negeri 2 Bandung.

5. CONCLUSION

The application of the Creative Problem-Solving learning model in productive Computer Assembly subjects can increase the activeness of students in class XI MM-1 SMK Negeri 2 Bandung. This is evidenced by an increase in the average student activeness of 16% from cycle I of 67% which increased to 83% in cycle II which is in the very high category. The application of the Creative Problem-Solving learning model in productive Computer Assembly lessons can improve the learning outcomes of students in class XI MM-1 SMK Negeri 2 Bandung. This can be seen from the increase in the percentage of classical completeness of student evaluation test results from pre-cycle conditions of 22% with an average of 63.3 increasing to 63% with an average of 77.4 in cycle I and increasing again to 88% with an average of 82.6 in cycle II.

The Creative Problem-Solving learning model applied to students of class XI MM-1 SMK Negeri 2 Bandung proved to be successful in increasing student activeness and learning outcomes in computer assembly subjects, it can be suggested as follows: As a reference material for teachers to use the Creative Problem-solving learning model in other materials and subjects so that students can be more active in learning activities and students' understanding of the material can also increase. In this study, it is known that in the aspect of problem solving getting the lowest score compared to other aspects, it can be suggested that teachers can be more creative in providing exercises so that students are accustomed to solving problems in learning.

6. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. The authors confirmed that the paper was free of plagiarism.

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