

## APPLICATION OF MODEL PROBLEM BASED LEARNING TO IMPROVE STUDENT LEARNING OUTCOMES IN SUBTEMA ENERGY AND ITS CHANGES

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### ABSTRACT

This study aims to improve learning outcomes of students through learning model of problem based learning on the sub-theme energy and change. This research was conducted in class III SD Muhammadiyah 4 Bandung and against the background circumstances of students are lacking in learning outcomes in the learning because teachers still use the learning that is conventional, that is, by using the lecture method, so that the involvement of learners in the learning was minimal. By using the model of Problem Based Learning can improve learning outcomes of students, because in this model, the students become the center in the process of learning, stimulating learners to think critically, and to deepen their knowledge about what they know and what they need to know to solve the problem. In addition to it's model of problem-based learning can also increase the activity and learning outcomes of students, help, develop skills to solve problems, and develop the skills to communicate orally. The conclusions obtained from this study is that the use of the model of problem based learning can improve learning outcomes of students. Thus, the application of learning model problem based learning in subtemaenergi and amendments thereto, can be used as an alternative method of learning to be applied in Elementary School.

**Keywords:** Problem Based Learning, Learning Outcomes, Energy and its Changes.

### INTRODUCTION

Education is essentially an activity that is conscious and intentional, as well as full responsibility which is done by adults to children that arise from the interaction of both so that the child reaches maturity aspired and continues (Ahmadi & Uhbiyati, 2007). Education is the main factor in the formation of the human person. In Law Number 20 Year 2003 about National Education System states that:

National education serves to develop skills and form the character and civilization of dignity in the context of the intellectual life of the nation, aimed at developing the potential of learners in order to become a man of faith and piety to God Almighty, noble, healthy, knowledgeable, skilled, creative, independent, and become citizens of a democratic and responsible.

Nowadays the development of education in Indonesia can not be separated from the development of science, technology and art. This change is possible because of the development of new demands in society, the working world, and the world of science which has implications on the demands of the curriculum changes on a continual basis. This can be seen since the independence of Indonesia the curriculum of primary and secondary education is already experiencing a ten times change. Changes to curriculum the last was in 2006 that called with the Education Unit Level Curriculum (KTSP). SBC implementation is still not optimal due to various factors, including the competence of teachers and facilities and infrastructure are still limited, as well as the system assessment is still weak. The turn of the curriculum are alternated, was not yet able to improve the quality of national education. SBC recently applied for 6 (six) years, but the Ministry of Education and Culture, has prepared a new curriculum called Curriculum 2013.

Curriculum 2013 aims to prepare the Indonesian people in order to have the ability to live as a person and citizen who is faithful, productive, creative, innovative and affective as well as able to contribute to the life of society, nation, state and civilization of the world. Permendikbud No. 103 Year 2014 chapter 2 verses 7 and 8 states that:

Curriculum 2013 using scientific approach or the approach of process-based knowledge in learning, include: observe, ask questions, gather information / try, reasoning communicate. scientific approach / approach process-based science is implemented by using the direct mode or the indirect as the foundation in applying the various strategies and models of learning in accordance with the basic competency that you want to accomplish.

Changes in curriculum are also influential in the teaching and learning process of learners in class who become the responsibility of the educators. One of the most important is the performance of educators in the classroom. How an educator can master the state of the class so as to create a pleasant learning atmosphere. Thus an educator must apply a learning model that reflects the characteristics of the students. In curriculum 2013, there are several types of learning models which learning model project based learning, problem based learning, and discovery learning. Among the three models that all use the approach of scientific, demanding that the learning process can be fun and active, so that students can easily understand what he is trying to learn and make the learning process becomes meaningful.

The findings of the field on the teaching and learning activities seen in SD Muhammadiyah 4 themes of energy and the changes in class III, many learners experience

boredom, sleepy, embarrassed to ask and embarrassed to issue opinions/answers when the teacher asks a question. This happens because the way of teaching educators explain the material performed with the use of the lecture method and only rely on textbooks that have been provided, without the use of media / props. Proven to see from the results of the daily tests the learners from the number of 31 people only 13 learners who achieve the value of success i.e. more than 70, and 18 learners obtain scores below 70, means in the learning of the learned have not yet reached the minimum completeness criteria (KKM) as expected.

### **Model Problem Based Learning**

Problem based learning (PBL) is one of the models of learning that can help learners to improve the skills needed in the current era of globalization. Problem Based Learning (PBL) this creates a situation where students become the center and the curriculum organized around problems, see a problem and use that problem as a means of learning to knowledge or theory that is new for learners.

Some definitions of Problem Based Learning (PBL): (a) According to Kosasih (2014), the Model of Problem Based Learning is a learning model that challenges students to "learn how to learn", work in groups to find the solution of the problems of the real world. (b) According to Arends (Trianto,2007), Problem Based Learning is a learning approach where students are confronted on the issue of authentic (real), so hopefully they can develop their own knowledge, cultivate the high-level skills and inquiry, independence of students, improve her confidence. From some definition above can be concluded that Problem Based learning is a learning model that is student-centered and work in groups, presented in the form of a real problem so that students have the skills to solve problems and find solutions of the problems of the real world.

### **Learning Outcomes**

Learning is essentially a process of change in the personality of the specialized skills, attitudes, habits, and intelligence. These changes are settled in a behavior that occurs as a result of practice or experience. ( Majid in the book thematic learning integrated, 2014).

According to Sudjana (2010) learning outcomes are the capabilities of the students after receiving the learning experience. Meanwhile, according to Purwanto 2015, the definition of learning outcomes according to para.html) results of learning is change in behavior of learners due to learn. Changes in behavior caused him to achieve mastery over a number of ingredients

are given in the teaching and learning process. Further he said that the results of learning can be in the form of changes in aspek kognitif, affective and psychomotor.

From these opinions, it can be understood that learning outcomes are behavioral changes in a person due to acts of learning that include the cognitive aspect, affective aspect, and aspects of psychomotor.

Benjamin Bloom (Sudjana, 2010) suggested outline divides learning outcomes into three domains, namely cognitive domain, affective domain and the realm of the psychomotor.

### **Energy And Its Changes**

Energy is the ability to perform activities or work. All the living things and nonliving have energy. Forms of energy including kinetic and potential energy. Kinetic energy is the energy possessed object due to its motion. An example; the gusts of wind that drives the windmill, running water. Kinds of kinetic energy include; heat energy, electricity, and magnetism. Potential energy is the energy possessed by an object due to its position. For example; water dipegunungan, a stone that stands on the hill and other. Kinds of potential energy are chemical energy, nuclear energy, gravity. The change of energy adalah perubshsn one form of energy into other forms of energy. Examples of energy changes; Change of heat energy into energy of motion, examples from the paper that formed the spiral moves when heated above a candle, the Change of electrical energy into heat energy, for example; irons, electric stoves; Changes electrical energy into light, for example; light bulbs, television screens and other.

### **METHOD**

This research uses descriptive method that has the goal to collect data in detail, depth, and actual. In this study generally explain the symptoms that have been there like recognize the problem and check the conditions that apply. This study also made a comparison regarding what was done in determining the solution in the face of a problem. The type of the descriptive method used is the research analysis of work and activity which aimed to investigate in detail the activities and work carried out. The subject in this research is 30 students of class III A SD Muhammadiyah 4 Bandung. The research sample is made of sampling techniques, namely simple random sampling. The technique of simple random sampling is a sampling technique the sample members from the population is done randomly. Retrieval with this technique is done because the population is homogeneous. This means that every child has the level of

ability the same. The population is homogeneous because at the time of the determination of the group, siawa divided into groups randomly without consideration of cognitive ability.

## RESULTS AND DISCUSSION

### Results

Based on the results of the analysis in the first cycle of learning outcomes with the KKM 75, learners who complete as many as 14 people and learners who did not complete 23 people with an average value of 1.91 and a percentage of the total of 37.8%. On the results of the analysis of cycle II the results of the study with the KKM 75, learners who complete as many as 24 people and learners who did not complete 13 people with an average of 2.66 and the percentage of as much as 64.8 percent. As for the data on the increase in learning outcomes of students in cycle I, and cycle II, with the use of model learning Problem Based Learning on the theme of energy and the changes in class III A SD Muhammadiyah 4 Bandung can be seen in the table below:

**Table 1.** The Increase In The Assessment Of Learning Outcomes Of Students

Cycle	Average	Value	%
Cycle I	1,91	14	37,8%
Cycle II	2,66	24	64,8%

Based on the learning outcomes of students in the above it can be concluded that the application of the model of Problem Based Learning can improve learning outcomes of students on the theme of energy and the change in SD Muhammadiyah 4 Bandung.

**Table 2.** The Increase In The Assessment Of The Performance Of The Implementation Of Learning Educators

Cycle I		%
1 Learnin	2,9	3,0
2 Learnin	3,1	
Cycle		%
1 Learnin	3,3	3,35
2 Learnin	3,4	

Based on the results of the implementation of the learning in the above it can be concluded that the activity of the teachers during the implementation process of learning in each cycle continues to increase. This is all of course not regardless of the efforts and improvement classroom management and the use of model Problem Based Learning can improve learning outcomes of students the theme of energy and its changes.

### **Discussion**

The initial actions carried out by the researchers is to conduct observations of the students of class III A SD Muhammadiyah 4 Bandung. The results of observations that have been made in April 2018 is the low learning outcomes of students in learning caused by a variety of factors problems that affect the activities of the learning process between educators and learners. Educators less increase the ability of learners in the teaching and learning activities so that learners are not interested in following the learning, experience learning difficulties, saturated and sleepy in the learning process.

After observing and analyzing, it the researcher conducted classroom action research by applying learning model Problem Based Learning to Improve Learning Outcomes On the Theme of Energy and its Changes. class III SD Muhammadiyah 4 Bandung. This study was conducted in two cycles, each cycle consisting of two meetings/ learning. Each cycle consists of stages of planning, implementation, observation, and reflection. The preparation of the planning of actions to be performed on cycle I is to steer the implementation process of action learning will be carried out. Researchers discuss and ask for help the teacher to assess the performance of researchers during the learning activities take place.

Educators ask the learners discuss how to observe and identify the energy changes that occur in the image. Learners working on the worksheet that has been provided to educators. During the learners do the discussion educator guide that is experiencing trouble and conducting the assessment process. After the students finished working on the sheet it works educators ask each group to present their discussion in front of the class. based on the results of observations made, the implementation of learning model Problem Based Learning is still not running optimally. Proven at the time of the implementation of learning model of Problem Based Learning according to the observer (teacher-class III A), the researcher is still seen less in terms of managing the classroom so there are still some students who chatted with his friends so that learning is not yet running conducive. Learning has not been seen growing as an educator in implementing the learning is still less invite learners to be active so confident

learners still look to the maximum. Researchers in the use of instructional media in the form of images is less clear because it is too small and too little. In addition, when the study group there are still learners who flirt with her does not help do the work of the group so that the results of the final test (posttest) of students is still much below the minimum criteria. This condition shows that learners are still not familiar in learning in the classroom by using the model of Problem Based Learning.

Based on what has been presented above, researchers make as a material reflection for the planning of further learning, so it is expected the implementation of subsequent learning can be better than before and run in accordance with what is expected. Things that need to be fixed such as developing learning on the stage of action subsequently, the provision of media is exciting again, which will be implemented in cycle II.

## CONCLUSION

There are some things that can be concluded from this study. Among them are: First, the Implementation model of problem based learning, worthy in learning SCIENCE in grade III of primary School. It is drawn from the results of observation and questionnaire research. Moreover, it can be seen also from the students ' response to learning that utilizes the learning medium is fun. Second, Learning that utilize media with a model of problem based learning can improve mastery of the concept of students, which are related between energy and changes. The final result achieved in learning through a model of Problem Based Learning to improve learning outcomes of students showed a good increase. At each cycle was conducted in three cycles has always increased as follows, at cycle I, 14 students got the score above KKM and 23 students got score under KKM with an average of 1.91. In cycle II has increased where 24 students got the score above KKM and 13 students received grades below the KKM with an average of 2.66. From the above description can be concluded that the application of the model of Problem Based Learning can improve learning outcomes of students on the theme of Energy and the changes in class III A SD Muhammadiyah 4 Bandung.

## .REFERENCES

- Ahmadi, Abu and Nur Uhbiyati. (2007). *The Science Of Education*. Jakarta: PT Rineka Cipta
- Amir, M. Taufiq. (2009). *Innovation Education Through Problem Based learning*. Jakarta: Kencana Prenada Media Group.
- Arifin, Zainal. (2009). *The Evaluation Of Learning*. Bandung: PT. Teen Rosdakarya

- Arikunto, Suharsimi. (2009). *Research Procedure An Approach To Practice*. Jakarta: Rineka Cipta.
- Conny. (2008). *Learning and the Learning of Preschool and primary School*. Jakarta: Macanan Jaya Cemerlang.
- Fitri Rizkia Gahari. (2014). *The use of the Model Guide Note Taking To Improve the Activity And Students Learning Outcomes In teaching SCIENCE Material Structure of the Earth*. Thesis UNPAS: not published
- The Judge, Thursan. (2002). *Overcome A Sense Of Not Confident*. Jakarta: Puspa Swara
- Iswidharmanjaya and the Great. (2004). *One Day Become More Confident*. Jakarta : PT Elex Media Komputindo.
- Kosasih. (2014). *Learning strategies and Learning Implementation of Curriculum 2013*. Bandung: Yrama Widya
- Kunandar. (2012). *Easy Steps Of Classroom Action Research As Teacher Professional Development*. Jakarta: Rajawali Press
- Majid, Abdul. (2014). *Thematic Learning Integrated*. Bandung: Remaja Rosdakarya
- Mulyasa. (2013). *The development and Implementation of Curriculum 2013*. Bandung: Remaja Rosdakarya
- Muslich, Masnur. (2012). *Carry out PTK it easy (classroom action research) practical guide for professional teachers*. Jakarta: Bumi Aksara
- Nuriani. (2014). *The application of model cooperative learning type jigsaw to enhance interest and student learning outcomes in SCIENCE learning*. UPI: unpublished
- Rusman. (2013). *Model – Learning Model To Develop Teacher Professionalism*. Jakarta: Raja Grafindo Persada.
- Sudjana, Nana. (2010). *Assessment Results The Teaching And Learning Process*. Bandung: PT. The Young Rosdakarya.
- Herawati, Susilo (2011). *Classroom Action research As a Means of Development of Professionalism of Teachers and Prospective Teachers*. Malang: Bayumedia Publishing
- Suyadi. (2013). *Learning Strategies Of Character Education*. New York: Rosdakarya
- Trianto. (2007). *Innovative models of Learning-Oriented Constructivist*. Jakarta : Prestasi Pustaka.