

Implementation Of Project Based Learning Through Making A Video As The Alternative Assignment and Its Effect Toward Motivation and Comprehension of Students in SMA MADANIA BOGOR

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I. Abstract

This research originated from the interviewing between the researcher as a physics teacher to some students about Physics assignments. Based on the interview, student felt so bored in doing their assignment and have no motivation in finishing it. Because there is no motivation in doing the assignment therefore the understanding of the students could not be increasing. Based on Curtis (2009:1) that motivation of the students could be increased by implementing Project Based learning (PBL). This research tried to see the influence of PBL toward the motivation and the understanding of the students. In this assignment students are asked to making a video about the application of Newton's law of Motion in daily Life. From this video students analyzing why do the video can categorize as the application of Newton's Law of Motion in daily Life. In making the video as the project, students are guided by the rubric, the timeline and also the goal of the project. Students have to finish their project in fifteen days, and teacher scored their project based on two criteria: the contents and presentation. Ten best video would be shown in front of the whole students in an event in the school. To see the understanding and the motivation of the students after finishing the project, the teacher gave the test and also the questionnaire about the project and their comprehension of Newton's Law of Motion. According to the questionnaire we can see that more than 60% of the students agree that the project can increase their motivation and also their understanding. The increasing of students comprehension can be seen from the test that given to students. From this research we can inferred that project base learning can stimulus student's motivation and also the understanding.

II. Introduction

Physics learning is considered as a "monster" for the student. There some reasons causing the student have poor interpretation of physics. First because the Physics consists of so many symbol and formula, second factor is the way physics teacher delivers the materials of physics. Student's opinion about learning physics making physics learning has no meaning. These caused students lose their motivation to learn Physics. Student's motivation has relationship with the comprehension of the student. Lack of student's motivation reduces student comprehension of physics concepts. Teacher has important role to guide the student for feeling the meaning in learning. Teacher needs to raise student's motivation and to make student understand the concept are being taught. So many ways can be developed to raise student motivation and student comprehension, one of them is by giving the assignment.

In fact assignment given is not always can increase the motivation and the comprehension of student. Based on the interview conducted, indicated that assignment accepted by the student could not increase student's motivation. The reasons why the assignment given by the teacher could not raise the motivation of the student is because of the format of the assignment. There are so many forms of the assignment. The forms of the assignments in learning physics mostly appear in the questions and answer format. In this kind of assignment, students only find out how to using the formulas in physics in order to solving the problems. This kind of assignment can increase student's comprehension but it is only stayed for temporarily. The student will lose their comprehension after they finish answering the assignment.

Usually assignment given by the teacher has several targets, first to raise student's motivation; the second is to increase student comprehension. If the assignment forms accepted by the student only asking the student to solve the problem, it obviously could not improve the motivation and comprehension of the students. Students only used the formula for answering the questions in the assignment without trying to understand the concept.

To make the assignment can increase student's motivation and also student comprehension of learning physics, researcher as physics teacher modify an assignment in the form of a project. Larmer (2010:2) said that the project will become meaningful if it fulfills two criteria. First, students must perceive the work as personally. Second, a meaningful project fulfills an educational purpose. Project Based Learning is one of the examples of meaningful project. Meaningful project can increase student's motivation and comprehension, therefore researcher tried to modify the assignment based on Project based Learning.

Through this paper will be described, how the PBL could influence the motivation and comprehensions of the student. The researcher modified the assignment by asking the students to making the video. By making the video about Newton's Law of Motion, the researcher will see the influence of this activity regarding student's motivation and comprehension.

III. Project Based Learning

According to Curtis (2009:1) Project-based learning is the instructional strategy of empowering learners to pursue content knowledge on their own and demonstrate their new understanding a variety of presentation modes. Curtis (2009:2) said that an effective project-based learning has the following characteristic:

- Leads students to investigate important ideas and questions

- Is framed around an inquiry process
- Is differentiated according to student needs and interest
- Is driven by student independent production and presentation rather than teacher delivery of information
- Requires the use of creative thinking, critical thinking, and information skills to investigate, draw conclusions about, and create content
- Connects to real world and authentic problems and issue.

These criteria can be used by the teacher to guide the students in deep understanding and motivation. By implementing project base learning, students can increase their motivation and their understanding because the learning is driven by the students itself. Project based learning usually applied in middle school area. Middle school years are challenging and we can keep the motivation of the students by guiding them in challenging activities. Project based learning can engage and motivate the students, that is why middle school is an ideal time to integrate project based learning. PBL Project based learning can increase the motivation of students because in the PBL the students have the opportunity to make students becoming an experts. In becoming an expert student need to learn even more about the subject than they demonstrate in their final product. In PBL there is also the chance to share the knowledge with others. Presentation is one of the vital components in PBL. Students need to learn how to present their ideas after doing their investigation.

Project based learning also influenced by the environment of the classroom. Students in the classroom come from diverse backgrounds and experience. Project based learning have to give same opportunities for all students to understand the concept taught. There are several activities can be done for accommodating unevenness of the student:

- Generate interest can be done by making the relationship between the concept with daily life
- Frequent reminders need to be done to control the process of the students.
- Put the students into a group
- Multiple opportunities
- Facilitative teaching techniques
- Provide support and feedback throughout the process.

IV. Method

The project is given to grade ten in science classes (biology and physics). Science students are given into several groups. Teacher explains what students will learn in Newton's Law of Motion. Basically students already learn about Newton's Law of Motion when they were at Junior High School but not all of the high school students understand the concept in Newton's Law of Motion. At that time, students need to help the other students to understand the concept about Newton's Law of Motion by making a video.

Each group got the project paper for guiding them in finishing their project. There are several components which exist in the instructions form, which are:

- Goal of the project

Students need to know what the task given, the goal and also the challenge of the project. In this project, the task of the student is to making a video about Newton's law of Motion. The goal of this project is to build the motivation and the understanding of the student about Newton's Law

of motion concept. To engage the motivation of the students teacher have to give the challenge of the project. The challenge of the project is to record student own video about the application Newton's Law of Motion.

- Product, performance, and purpose

In finishing project base learning, students have to get clearly explanation about the product that will be yield by them. In this project student have to present the result that they had recorded and then student would make the presentation about why did they put the video into that kind of category.

- Standard and criteria for success

In order to reach maximum result the video have to meet the standard. There two standards in finishing the project which are: the project had to be submitted on time and the video have to be played in window media player.

- Role

In this project students were acting like middle school student who is helping the other students to understand the application of Newton's Law of Motion in daily life.

- Audience

The video was not only seen by the teacher, but whole students in the high school will watch five best video. It means student that watch the video came from un-scientist background.

- Situation

To make the students more engage to the project, the video will be put into a competition. Teacher set the situation so that all high school students can watch the video. There will be three winners for best video and also favorite winner for the favorite video. The favorite video will be chosen by the audience.

- Performance task rubric

There are two components which exist in performance task rubric. First is the content of the video. The content of the video is divided into four levels. Every level is multiplied by 20 points. Second is the presentation, presentation also divided into four levels and every level is multiplied by 5 point.

- Time Table

In order to reach maximum result, students are guided with the time table. Time table helps the student to be more discipline with their project. The important components in the time table are the list of the activities and also the time or day.

- Feedback throughout the process

As long as the students working on the project, teacher gave the chance for the student to discuss their problems that faced by the students in finishing their project. This is done to guarantee the student working in the right track.

The project would be done by the students in fifteen days. After doing, 70% of the students had hands on the project. Teacher scored the video based on two categorizations the content and the presentation. Teacher also scored the process of the project. Teacher chose five base videos and five videos will be shown in front of all high school students. One of the video will be chosen by the audience as the favorite video.

Motivation of the students after finishing the project can be measured by using the questionnaire meanwhile the comprehension of the student can be measured several ways which are by the test, by the process and also by the result of the video. The questions in the questionnaire are divided into four questions. First question is asking about the attachment of the student toward the project given. Second question is asking about student's comprehension about the concept. Third

question is asking about student's opinion about the assignment in PBL format. Forth question is asking about the motivation of the student after completing the project.

The understanding of the student after finishing the project is indicated by the process in making the video, the final product of the video and also the test. Teacher scored the product based on the performance task rubric which contains two criteria which are content and the presentation. The written test examines the students in remembering phase (C1), Understanding phase (C2), Applying (C3), and Analyzing (C4).

V. Result

The questionnaire indicating the data about several aspects:

1. The percentage of the student's attachment to the project.
2. The motivation of the students in doing their project.
3. The understanding of the students after completing the project.

Detail information about these aspects will be described in the graph below.

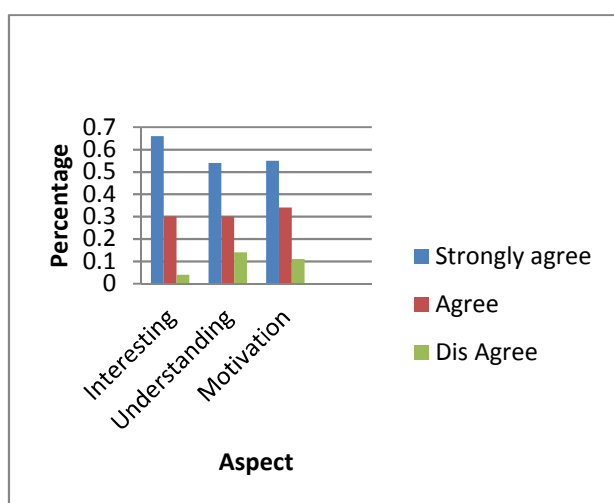


Figure 1: Chart of the data taken from questionnaire

The chart indicates the student's opinion about the project. More than 50 % students agree that the project can increase their understanding and also their motivation in doing the project.

The written test is also conducting to measure the comprehension of the students.

VI. Discussion

The chart shows that more than 60 % of the students have good motivation and have good understanding after finishing the project. The interesting aspect gives the highest percentage than two other aspects. In doing their project, student can use their own ideas, this is one of the reasons why the student is so interested with the project given. Student has a role as an expert who can help the other students to understand Newton's Law of Motion concept. In completing their project, student must to have several competencies, such as: gather the ideas, discuss the ideas, record the video, edit the video, explain the video and present the video until the audience can get the point. These competencies make the students felt so interested in finishing the project. The project is not only about how to apply the formula in answering a question

but how to find the application of Newton's Law of Motion in daily life. Students have to produce a product which can be used to explain a certain concept. Based on taxonomy Bloom this level can be categorized as higher order thinking where the student can create something regard to their knowledge.

The interesting has relationship with motivation and understanding. Student can easily raise their motivation and understanding if they are interested with the thing which they are doing. The chart indicate that the student have good motivation and understanding after finishing the project.

The comprehension of the student had been measured not only by the questionnaire but also the written test in the test. The questions within the test were appeared in measuring the comprehension of the student. The question is addressed to measure the remembering (C1), the understanding (C2), the applying (C3) and the analyzing (C4). The comprehension aspect is measured by the C2 aspect.

The test result indicated that students have good comprehension it can be seen from the result of the test. Among 50 % student answer the question about the understanding with correct answer.

VII. Conclusion

Based on this research can be concluded that motivation and the comprehension of the student can be increased by using Project Based Learning.

Project can be used as the alternative assignment to enhance student's motivation in learning.

VIII. References

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