DESIGN OF PERFORMANCE ASSESSMENT BASED ON PROBLEM BASED LEARNING IN IMPROVING STUDENTS' SELF REGULATION

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Abstract - The purposes of this research are: 1) understanding the needs of teachers and students will be performance assessment that can help in improving the skills of self-regulation of students, 2) analyze the learning process of physics in several high schools in the District Pesawaran, 3) designing the instrument performance assessment-based problem-based learning (PBL). Preliminary studies in this study consisted of library research and field study. Studies conducted in the literature study are to learn the concepts related to the study. While a field study conducted by distributing questionnaires to several teachers and senior high school students in the District Pesawaran. The subjects were a few teachers and students of senior high school in the county Pesawaran. Data were analyzed qualitatively through four stages: encoding the results of questionnaires, data tabulation, analysis of qualitative data, and make interpretation of results of analysis in accordance with the research questions and make their conclusions. The findings of this preliminary study are: 1) Teachers and students in several senior high school in the county Pesawaran need an instrument performance assessment to help students develop skills of self-regulation, 2) Some physics teacher senior high school in the District Pesawaran already know and never apply Problem Based Learning in learning but still feel difficulty in its use; 3) Design a performance assessment instrument developed tailored to the stage of Problem Based Learning in order to improve students' Self Regulation.

Keywords: *performance assessment, PBL, self-regulation*

I. INTRODUCTION

Learning is the most important activity in education and a systematic program with a specific sequence of steps starting from planning, implementation to evaluation/ assessment. The quality of learning is determined by the level of mastery of concepts students to the material being studied. Evaluation/ assessment is one of the lessons that cannot be separated from the learning itself. Assessment is particularly important as the assessment can provide information to teachers about student progress in the learning process. [1] assessment provides information that can help improve students' learning and help teachers in teaching. The performance assessment is one form of assessment is considered accurate enough to determine student learning outcomes. Performance assessment involves students in activities that require demonstration of certain skills and/ or in terms of creating a product specification. Assessment of performance is very close relation to the ongoing process of learning that results in students' understanding of the material presented.

The performance assessment will provide an opportunity for students to demonstrate their learning ability in its totality from start to finish that can be evaluated by others in this case the teacher or lecturer [2]. Performance assessment involves students to demonstrate their ability to think, to do a specific skill, and / or to create a particular product [3]. [4] Assessment is a component of the learning process traditionally has been accomplished through pencil and paper. The performance assessment is an approach that is needed to assess the learning outcomes of gifted students [5].

To improve thinking skills in mastering a concept needs to use proper methods and techniques in the delivery of the material. The relationship between teaching and learning models are closely related, because the use of appropriate learning models will produce a good learning process as well.

To provide feedback so that students are able to develop the capacity to think, need to use appropriate learning techniques. Problem based learning (PBL) can help students to develop thinking skills and improve student learning independence. [6] States Problem Based Learning, will help students to develop their cognitive, instrumental and transversal competences, which will allow them to expand their learning opportunities. Not only that, PBL will also make students more active in seeking a solution, solving a problem, and will be more active in track down something related to his problem. [7] States that PBL increases students' thinking skills, and will also provide a permanent learning, as well as active participation in learning, attracts the attention and interest of the students to learn. Problem Based Learning leads to better test performance with minimal mental effort invested in studying and learning more efficient[8]. The resulting performance on the learning problem based learning will foster liveliness, interest and awareness of students in learning physics.

Self-regulation (SR) is a process of self-assessment in which students represent tasks, plan how to implement, monitor and assess whether the implementation is sufficient, able to overcome difficulties and emotional that normally arise, assess performance and make the relationship conclusions about the results [9]. Self-regulation is also interpreted as a self-conscious process on psychic activity that ensures the setting as well as progress in meeting the specific purpose [10]. If the process is self-aware students will learn to high, then the students can learn the maximum. Therefore, self-regulation is considered important and is needed by every student.

II. METHODS

This research is preliminary. In this study generated assessment performance-based design problem based learning (PBL) in improving students' self regulation. The sampling technique is cluster random sampling means that sample by selecting one or several groups by simple random sampling as a sample. The subjects were students of class X Senior High School totaling 20 students and 4 teachers physics 2015/2016 school year in some schools in the District Pesawaran.

The data collection is done 2 steps, the first step in analyzing the needs that are literature study and field study. Studies conducted in the literature study is to learn concepts related to the study. While a field study conducted by distributing questionnaires to several teachers and high school students in the District Pesawaran.

Analysis of the results of questionnaires carried out by to use several steps: encoding the results of questionnaires that have been distributed, the tabulation of the data makes it easier to read, analyze qualitative data, and makes interpretation in accordance with the results and make conclusions.

III. RESULTS AND DISCUSSION

Based on analysis of the requirements found in the field, it is known that teachers need effective instruments of performance assessment that can be used to enhance the students' self regulation.

Table 1. Analysis of the implementation of the Performance assessment by teacher

No	Analysis of Answers
1.	As many as 75% of high school physics teachers have been to use performance assessment of learning
2.	A total of 100% high school teacher considers it important performance assessment
3.	A total of 100% high school teachers feel the need for performance assessment instruments
4.	As many as 75% of high school teachers find it difficult to use the instrument of performance appraisal

Based on the results of the analysis showed that the majority of high school teachers in the district of Pesawaran aware of the importance of performance assessment and they have been to use the instrument performance assessment for learning. However, they find it difficult to use

the instrument. So most teachers feel the need for a performance assessment instrument that is easily understood and used by teachers. The analysis in the field also showed 75% of teachers agree if developed performance assessment instrument to facilitate teachers in making judgments.

Table 2. Analysis of the implementation of the Performance assessment by students

No.	Analysis of Answers
1.	45% of students said the teacher of physics tell about the aspects to be assessed and how the assessment to all students at the beginning of learning
2.	60% of students said the teacher of physics are often assessed when the learning process
3.	60% of students said teachers often observe physics student activities during the learning process
4.	30% of students say teachers of physics ever conduct performance appraisals that were previously communicated to students
5.	70% of students to be more active when assessing the performance of the previously communicated to students
6.	50% of students have been asked by his physics teacher to demonstrate the performance and skill in learning and then assessed by teachers
7.	45% of students feel less fair with the assessment given by his physics teacher
8.	60% of students had shown good performance during the learning process to get good grades in physics

Based on the analysis of the answers obtained from the questionnaires given to students can be found in accordance with the statement of the number 4 only 30% of students say that teachers of physics ever performance appraisal. These statements contradict the statements of student numbers 2,3, and 6 which states that the majority of students said physics teacher they ever ask students to demonstrate its performance during the learning process and their physics teacher also often assessed by observing the activities and performance of students during the learning process ongoing. This was probably due to lack of understanding of students will be the performance appraisal itself. Meanwhile, the students feel would be more active if the assessment of performance previously communicated to students in advance. Hence, the explanation needs to be given to students on performance assessment.

Table 3. Analysis of Teacher Knowledge to be Self-Regulation

No	Analysis of Answers
1.	As many as 50% of teachers SMAN know about self-regulation
2.	A total of 100% high school teachers to motivate students to study harder
3.	As many as 75% of teachers consider the level of awareness of students in learning and learning outcomes

Based on this analysis well known that most teachers understand the self-regulation or the level of understanding and awareness of the importance of students' learning. Their self-regulation in students allows students independent learning. Students involved a learning environment that supports independent learning, have to manage their own learning and take responsibility for learning in other words, they must become independent learners [11]. Independent learning in education is based on the premise that students use metacognitive, motivation, and behavior in their learning process [12]. In this case, it takes a learning model that can enhance students' self regulation. It is based on the results of the analysis of the needs of students in the field.

Table 4. Analysis of the Needs of the Students will be Learning PBL

No	Analysis of Answers
1.	In the study of physics, 100% of students say that they have had in learning by groups
2.	In the study of physics, 70% of students say that the physics teacher never given a problem to solve in groups
3.	In the study of physics, 90% of students say that they are happy if learning is done in groups
4.	In the study of physics, 80% of students agreed when learning physics conducted in groups and presentations.

Based on the results of this analysis can be seen that most of the students prefer it if the learning is done in groups. Therefore, the model of Problem Based Learning (PBL) be the perfect

solution in improving students' self regulation. Problem Based Learning aims to develop student-centered environment [13].

Model PBL used by researchers to use the stages Furthermore, of the eight principles of PBL, Miller in [14] noted several strategies in PBL include: (1) learning begins with activities and simulations, (2) a demonstration based on the data, (3) discussion group, (3) individual and group projects, (4) The written and oral presentations, (5) the presentation of the material-based activities, (6) make predictions before carrying out the activity, (7) pushed to do a lot of representations, think, and reflect , and interact with peers.

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Design performance assessment wants researchers to develop other than by to use problem-based learning, the researchers also wanted to improve the existing self-regulation in students. Through Problem Based Learning students will become more active in its performance. Thus the awareness of students to study physics will grow not only improve on the affective aspect but also the cognitive and psikomotornya. The stages of problem based learning that researchers developed in this study were: 1) the orientation of students on the issue; 2) Discussion Group; 3) The investigation / search for solutions; 4) present the results of the discussion; and 5) the analysis and evaluation of problem-solving process.

Table 5. Performance Assessment Instrument Design

Stages	Implementation Techniques	Instrument
Orientation	Observance	Observation sheet
Group discussion	Observance	Observation sheet
Search Solutions	Written test	Problem Description
Presentation	Observance	Observation sheet
Analysis	Written test	Problem Description

IV. CONCLUSION

Based on the above research purposes, it can be concluded: 1) Teachers and students in need of a performance assessment instrument that can assist students in developing self-regulation; 2) Some high school physics teacher in the District Pesawaran already know and never apply Problem Based Learning in learning, but still had difficulty in its use; 3) Design a performance assessment instrument developed tailored to the stage of Problem Based Learning to help increase students' Self Regulation.

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