



ANALYSIS OF LEARNING ASSESSMENT IN PHYSICS AT AUTOMOTIVE ENGINEERING EDUCATION STUDY PROGRAM STATE UNIVERSITY OF MAKASSAR

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ABSTRACT

This study is a survey research which aims to determine the existing implementation of engineering physics learning. The research object were a lecturers in engineering physics at the Automotive Engineering Education Studies Program of State University of Makassar. The Aspects that assessed were the learning assessment and learning process undertaken by lecturers. Based on the analysis obtained results, namely: (1) assessment in physics learning techniques have not provided sufficient information on which to take the decision making learning; (2) supporting the implementation of the components such as the preparation and analysis of assessment items, assessment criteria and rubrics not become a habit of the lecturer in preparing their lecture; (3) sharing criteria and student involvement in the process of assessment (self-assessment or peer assessment) has not become a habit lecturer, and (4) the implementation of the assessment has not been able to identify students misconceptions against learning materials so that the principle of fairness in the assessment is still not realized.

Keyword: *Learning outcomes, assessment, Engineering Physics*

INTRODUCTION

Assessment is an integral part of the educational process. Efforts to improve the quality of education can be reached through the enhancement of the quality of learning and assessment. Learning and assessment is one inseparable unity. The quality of learning can be seen from the results of the assessment. Otherwise a good scoring system will encourage teachers to determine a good strategy and motivates students to learn better.

Assessment is defined as the process of collecting information about the performance of students, to be used as the basis in making decisions (Weeden, Winter & Broadfoot, 2002; Boot, 1996; Nitko, 1996; Mardapi, 2004). Furthermore, Black & William (1998) provide a definition that places emphasis on the

utilization of the data results to modify learning better, saying that assessment as all activities carried out by the teachers and students to assess themselves, which provide information to be used as feedback to modify the teaching and learning activities.

Assessment Standard for School Mathematics (NCTM,1995) States that the assessment is a process to obtain evidence or facts regarding knowledge, abilities and attitudes to use in practice. Then based on those facts make conclusions about the emphasis to the process that illustrates the capabilities of what is known and it can be done. In providing assessment, it should be retrieved data ability of students in terms of theory, work procedures, the ability of problem solving, reasoning, and communication (Suherman, 2001). In

addition, Johnson & Johnson (2002) defines assessment as a collection of information about the quality or quantity of changes in student, group, teacher or administrator.

Engineering physics courses is basic skills courses in all departments in the Faculty of engineering that are taught in first-year students. These courses provided as basic science before studying other advanced engineering courses, with the consideration that the concepts of physics and its implementation is needed by the student in learning science concepts next also in various science and technology development. Because of this role, the engineering physics courses is one of the subjects of the basic skills that are essential in all majors who are in the Faculty of Engineering.

Various refinements have been carried out by a team of lecturers in order to support the learning process of teaching in this subject, among others, the refinement of the curriculum/syllabus and textbook development. Numerous attempts have been made, apparently have not been able to solve a variety of problems arising in the process of teaching and learning these subjects, even still have poor quality of learning and student learning outcomes. The main factors cause the appearance of its problem, in terms of the learning process, during this assessment developed still oriented to product assessment to assess the results of the study and less doing performance assessment to assess the activity of the learning process.

To address the practice of formative assessment that has been expressed above, the Assessment Reform Group (2002) introduces an assessment involving the students in every aspect of the assessment to build their confidence and maximize product achievement model. This assessment is suitable for all situations and can provide benefits for the teachers as well as students in identifying

the next learning stages required to make progress, mindful of the strengths and weaknesses that are owned by them (CEA, 2003).

Information about students' strengths and weaknesses to a concept of lesson, became one of the key factors in the concept of assessment. Sharing the learning objectives and success criteria to students in early learning, was one of a series of assessment process that must be conducted by a lecturer in learning. By knowing this, students can monitor the progress they have made in an attempt to achieve the success of the study. Therefore, the involvement of students actively in the assessment process is a key factor in this assessment, with the goal to motivate, correct, and improve student learning (Stiggins, 2005).

Based on the above issues, then in general the purpose of the research is to analyze the implementation of physics engineering learning assessment in Engineering Faculty of State University of Makassar.

RESEARCH METHODOLOGY

This study is a research survey to analyze the existing conditions of learning implementation conducted by the lecturer in engineering physics courses. The research sample is lecturers of Engineering Physics at Faculty of Engineering which amount 8 departments.

Data retrieval method using question form with the instrument a questionnaire to capture data on the implementation of the assessment conducted by the lecturer in Physics learning. In addition carried out interviews to obtain supporting data that can not be taking through the questionnaire. Data analysis in this study uses descriptive quantitative and qualitative approaches.

RESULTS AND DISCUSSION

The overall results of the study are shown in table 1 and table 2 below:

Table 1. Existing Data Implementation Of Learning Physics Engineering

Aspect	Sub aspect	Implementation (%)
1. Preparation before the learning	a. Contract of lecturing	90
	b. The creation of plans learning	80
	c. analysis of the Problem set	10
	d. Assessment Criteria	10
	e. Scoring Rubric	0
2. During the Learning	a. Sharing the contracts lectures with students	90
	b. Sharing the learning objectives	80
	c. Sharing the criteria of assessment by students	10
	d. Sharing the assessment with students (self-assessment/peer assessment)	0
	e. Giving feedback	10
	f. Granting of student made comments and suggestions	10
	g. Giving task at home	90
3. After the Learning	a. Reflection	0
	b. Academic Tutorial	0

Look at the Table 1 above, that aspect of the preparation of the lecturers before learning, shows that almost all lecturer stated has made contracts and preparation of learning plans (RPP). But other aspects of the sub into supporting the execution of the judgment as a matter of drafting, analysis of grain of matter, the assessment criteria, and the scoring rubric not yet a habit of lecturers in preparing the study. It describes is still lack of preparation undertaken lecturer in preparing the study, which will have an impact on the lack of information that can be used as a basis for decision making in learning.

As well as sharing assessment criteria, assessment rubrics, scoring guidelines, sharing with students, assessment and granting of feedback, still very less performed by the lecturer in the learning process. Do the reflection and academic tutorials are also not yet a habit

lecturer after learning done. This indicates that lecturers are still difficult to identify students' misconceptions towards material of Physics Engineering. Moreover feedback as one of the major components of the assessment could be made only by a fraction a lecturer. According to Black & William (1998), sharing assessment with students (self-assessment or peer assessment), and the giving of feedback, is a factor that can improve product performance (academic achievement, motivation, attitude, self-confidence) students. Besides Clarke (2001), who is doing research on learning objectives, the development of criteria for success, and sharing assessment through self-assessment states that students are motivated by the existence of the thing so that it can refine and improve their learning. Results of the study more about giving feedback by Kluger (2004), stated

that the feedback is effective orally is an important tool to foster student learning. So the assessment is more geared to

helping students better understand learning while reducing the problems of students.

Table 2. Existing Data of Assessment Implementation at Physics Engineering

Aspect	Sub aspect	Implementation (%)
1. Implementation of Formative Assessment in one semester	a. 2 times	60
	b. 3 times	25
	c. 4 times	10
	d. More than 4 times	5
2. The form of the test which is used	a. Description/Essay	80
	b. Multiple choice	20
	c. Complete the question	0
	d. Match the question	0
3. Source tests on number 2	a. Made by self	10
	b. Taken from reference books	80
	c. Taken from a collection of reserved	10

The Table 2 above shows the frequency and form of the test used by lecturers to implement formative assessment. The results obtained indicate that the substance of a formative assessment is not yet well understood by their lecturers. Formative assessment largely conducted at the middle and the end of the semester. While the formative assessment is basically to acquire the appropriate information so lecturers can modify the techniques and strategies of the lesson according the results of the diagnosis of the learning that has been done.

The form of the test which is used to carry out the assessment, in general a lecturer using the form description. However, these tests are mostly taken from the book question bank or package, so it is not designed to identify students' misconceptions towards the given learning material. The results of the interviews also indicated that the orientation of assessment which is done merely to provide value to students, not to help students better understand the given learning material.

This will have an impact on students' attitudes toward engineering

physics courses are increasingly negative, and consider these courses became difficult and boring. Whereas the existence of engineering physics courses support the much-needed understanding of other subjects. This fact also impact on the still poor quality of the process and the results of engineering Physics learning.

According to the Kandak and Egen (2007) that the assessment conducted must be meaningful and can reveal the individual differences of students, and can also expose the misconceptions students toward learning so that teachers can obtain sufficient information about the real problems faced by the students. Based on assessment information, teachers can modify the assessment strategy and the learning needs of students. As well as basic in the giving feedback to students.

CONCLUSION

Based on the results of the analysis it can be concluded, as follows: (1) assessment in physics engineering learning have not provided enough information to making learning decision; (2) supporting the implementation of the assessment

components such as the preparation and analysis of grain of matter, the assessment criteria, and the scoring rubric not yet a habit of lecturers in preparing learning; (3) sharing criteria and student involvement in assessment process (self-assessment or peer assessment) is also not yet a habit of lecturers, and (4) the execution of the judgments have not been able to identify students' misconceptions towards the learning material so that the principle of fairness in the assessment has still not materialized.

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