DEVELOPMENT ASSESSMENT MODEL TO HIGH ORDER THINKING SKILL ORIENTATE FOR EVALUATION STUDENT COMPETENCY

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ABSTRACT: High order thinking skill (HOTS) is a skill that should be present in every teaching. Teaching automotive particularly require teacher to be skillful in planning activities that thinking skill among student. Automotive techology to develop, teacher of automotive technology should be to make and to develop test base on HOTS, to anticipate its. This research examines what practitioners in automotive education judge to be the key issues in the current and future use HOTS assessment. This research using of R and D with Four D Models. The result show that HOTS can be make teaching effectiveness and achievement student increase 12%.

Keywords — Teaching, Evaluation, Teacher automotive, Thinking high level, Thinking skill.

1. INTRODUCTION

Implementation of Curriculum 2013 lead to changes in the learning process. In the Curriculum 2013 the learning curriculum oriented toward active learning. Active learning can be High Order Thingking Skill (HOTS). HOTS wants student to assess in high order thinking, so that the test plan of student should be designed in C4 until C6 on cognitive taxonomy Bloom.

Increased diversity of expertise in vocational followed by increasing public participation can learn at vocational school. This makes some competence skills increase the number of students. Expertise competence of Teknik Kendaraan Ringan – TKR (Small Vehicle Engineering - SVE), as part of the automotive engineering disciplines, in 2013 was named skills competency of curriculum called packets. This package became the idol of junior high school to graduates, and the number of students has increased dramatically in taking the package. In order to anticipate the decline in the quality of education and changes in the vocational learning process, Development Technology, especially vehicle, could be expected to overcome this problem. It demands that we continue to make innovations to evaluate student.

The demands of these advances have logical consequences on attempts at improvement in continuously learning and evaluation. One consequence is the change and increase in volume and complexity of the assessment. The needs of assessment accurately at different levels and classroom management, and in order to improve the quality of care and improving the quality of the material assessment is a vital necessity, and determine the success of the assessment process.

In order to participate the improvement of the quality service balance and quantity of student learning both technical and strategic as a result of the implementation of the curriculum 2013. These development include in the facilities and Resources development for teacher, the results of which are expected to contribute for improving the reliable learning quality, especially for vocational which have practical activities learning at SMK 1 of West Sumatra, include Training and Technical Education Centre (Balai Latihan dan Pendidikan Teknik - BLPT), Padang. Various innovations of teaching are continued by teacher, so that in order the learning process is going well.

HOTS is an attempt to innovate development for learning strategies. Learning assessment activities are associated with the environmental context of daily students' life, so that students are active and more easily understand the content of the lesson, linking the lesson content with the their surrounding automotive technology environment will make learning more meaningful, because students know the lesson obtained in the class would be useful in their daily life.

The problem that develops in schools today is that most TKR teachers have difficulty in designing and implementing assessment in accordance with the Curriculum 2013, on the other hand a new paradigm of education (reflected in the curriculum 2013), students' assessment is not only done in the cognitive domain , but also in the psychomotor realm and affective sphere. Lack of teacher knowledge about various assessment techniques (other than "paper and pencil test"), how to design, and how to implement it makes the assessment tool invalid and unreliable. On the other hand, school demands (especially for reporting) require the teacher to conduct a comprehensive assessment. The results of the research interview (as a team of RSBI facilitators) with some TKR teachers in West Sumatra indicate that in general they do not yet understand how to assess students' ability. As a result, in filling out report cards teachers tend to

assign numbers to these domains on a very subjective "estimate" basis, without making specific instruments to measure those aspects. In addition, there was also an assessment of teachers who did not assess these aspects correctly. The learning assessment activities have been mostly only on cognitive aspects, measured and assessed through "paper and pencil test".

This research will be developed an assessment based on HOTS for Dasar Teknologi Otomotif (DTO) and Dasar Perbaikan Otomotif subjects in TKR class XI package. The results of this study are expected to help teachers TKR, especially class XI SMK, overcome their difficulties in implementing assessment. Problems to solve through this research are: how to develop implement HOTS validation, practical, and effective for learning competency package of TKR in class XI SMK can overcome the problem of implementation of curriculum 2013. This research is driven by the desire to contribute in solving assessment problems faced by TKR Smaall Vehicle Engineer in SMK in implementing the 2013 curriculum. This desire will be realized in the form of making assessment based on HOTS for two subjects. More specifically, this study aims to develop and implement valid, practical and effective e-assessment tools.

Schlecty and Vance (1981) concluded that the teaching experience was positively related to the competency test score (one of the indicators was the ability to make tests). However, in Person research, the opposite is true that the teaching experience is negatively related. Thus, teaching experience is a factor that needs to be investigated, so it is clear that its role in determining the quality of teacher-made tests. The reason for the importance of developing test skills: 1. Develop a test helps clarify the behavior that is important to learn. 2. The skills learned in developing the test can be applied in the aspects of curriculum planning and development and lessons learned. 3. The skills and knowledge gained in test assignments help evaluate the quality of tests made by others or other agencies. 4. Well-crafted tests can serve as guidelines for objective and fair procedures in judging. 5. knowledge of the latest development of the test will lead to the understanding of the limitations and understanding of how the misuse occurred. To be able to develop (create) qualified tests teachers need some special skills (Mehrens and Lehmann, 1973: 119 - 200): a. Mastery of the subjects to be tested b. Awareness of the underlying values of education c. Understanding the characteristics of the individual being tested d. The ability to conjure ideas e. Mastery of type and technique of writing questions f. Awareness of the strengths and weaknesses of writing questions To make the test, first plan the steps that begin the preparation of the test. Here all aspects of test preparation are considered. This is the hallmark of developing a good test specification. The test specification is a description that shows the overall characteristics that the test should have developed. The test specifications include:

a. Determine general objectives as well as test requirements
b. Arranging the test grille as a reference, contains scope, pressure and parts of tests that are subject matter and cognitive level measured.
c. Choosing the type of questions that match the purpose of the test, scoring, administration and printing tests.
d. Determine the degree of difficulty of the problem and its distribution.
e. Determining the number of grains for all and part of the test, weight, reliability, time and test.
f. Determine how the problem is compiled in the final form.
g. Prepare writing questions and study questions.

Mehrens and Lehman (1973: 197-198) add that the question formulation is clear, the test items written on different papers, made more than necessary, are written after the material is taught, make corrections before it is tested and prepare the key and assessment rules. In the 2013 curriculum, teacher assessments are assessed through authentic assessment techniques, including: objective tests (PG), essay tests, portfolio assessments, assignment assessments, affective assessments, and performance for practical assessment (Cangelosi, 1990). The assessment model that will be developed and implemented in this study is oriented of HOTS.

2. RESEARCH METHODS

This research was conducted by using of research and development (R&D) method. The research development approach is used to design and develop learning tools and valid and practical assessment for the subjects DTO and DPO in class XI SMK. Research and development is the research used to produce a particular product and test the effectiveness of the product. In the development will be analyzed the current system, how the procedure of processing information by teachers and students in getting the final result of learning results. The development model used in prototyping development research.

Research and development is the effort to develop and produce a product in the form of assessment. Research development has three main goals: Produce product design that will be developed and used to improve the quality of assessment. 2. Testing the effectiveness of the product that has been created as a primary validation function through trials; 3. Testing the

effectiveness, efficiency, and attractiveness of the product. In this study developed assessment tools and validation and practical for learning and HOTS test material productive, its effectiveness. Research activities are conducted two stages, namely: needs analysis and designing prototype and implementation.

Research in the first year is focused on designing software prototype, which consists of learning tools and assessment tools based on PBL and Web that are valid and practical for the class XI Electrical subjects. The research activity begins with a needs analysis that includes: analyzing the TKR Curriculum, conducting interviews with teachers and students, as well as reviewing the litertur about the assessment and design.

Table 1: Prototype Validity of Class-Based Assessment Tool

Objek yang divalidasi	Metode pengumpulan data	Instrumen
Validitas perangkat asesmen	Discussion with expert.	Validation Sheet

Discussions with some education experts and evaluation experts and automotive experts.

Tabel : 2 : Validator

No	Nama	Keahlian
1.	Dr. Dedy Irfan, MT	Teknologi Informasi
2	Drs. Rahmad Hadi, M.Kom	Teknolgi Informasi
3.	Drs. Andrizal MPd	Otomotif
4.	Drs. Prawoto, MPd	Guru Otomotif

3. RESEARCH RESULTS

Table 3. Category Validity Value of each Expert

No.	Nama	Total Skor	Presentase (%)	Kategori
1	Validator I	46	92	Very Valid
2	Validator II	45	90	Very Valid
3	Validator III	47	94	Very Valid
4	Validator IV	43	86	Very Valid

From Table 3 above can be known, the maximum score of all aspects of the expert side is 50 (maximum score x the number of questions = 5 x 10 = 50). Based on the data in the table above, it concluded 4 experts stated the value information system is very valid.

4. Conclusion And Implications

4.1 Conclusion

Based on research result of development of HOTS Assessment can be drawn conclusion as follows: The eligibility of HOTS is assessed by experts from various aspects that obtain an average percentage of 98%.

4.2 Implications

The process of easy use, both for teachers and students is likely to increase the effectiveness and efficiency of time in the process penginputan teaching materials and student assessment so that student learning outcomes can increase.

The implication of this research is HOTS can be used for the process of inputting teaching materials and assessments by teachers and see the final results of students quickly and easily and can improve the implementation of science and technology in schools.

In addition, the school needs to complete and renew school facilities and infrastructure such as the need for internet, modem, speedy, and provide training on the use of Assessment to teachers and students. The school committee should also provide financial assistance so that the implementation of HOTS can run better.

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