

Development of authentic instruments computer competency assessment for students of Vocational High School 5 in Padang City.

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Abstract. This study aims to develop authentic instruments in Digital simulation assessment to measure student learning skills that are valid, practical and effective. This research uses a Research and Development / R & D with the ADDIE development models. Through the stages of analysis (analysis), design (design), development (development), implementation (implementation), evaluation (evaluation). The research subjects were Class X students of SMK Negeri 05 Padang, digital simulation subjects. The Data of this study were Obtained through validation instrument sheets, practical questionnaires, and observations. The results of the validity tests show that the developed lesson plans are valid and authentic assessment. The practicality test results show that the authentic assessment developed is very practical with the percentage of the practicality of the teacher towards the lesson plan is 94% and the evaluation is at 92%. The effectiveness of test results state that authentic evaluations that are developed Effectively, 37% are used with time series analysis, the effect of treatment on the value of completeness of students increases and the test gain score is 0:37 with the medium category. Thus, this study produces authentic in digital simulation learning evaluations that are valid, practical and effective.

1. Introduction

Permendikbud No. 104 of 2014 explained that the assessment of the educational process is a component that can not be separated from the other components, especially learning. Assessment is the process of collecting and processing information to measure the achievement of learning outcomes of students. Assessment of learning outcomes by education carried out to monitor the process, the learning progress, and improvement of learning outcomes of students on an ongoing basis. Furthermore, assessment of learning by educators have a role, among others, to help learners know the learning outcomes (learning outcomes). Based on the assessment of learning outcomes by educators, teachers and students can obtain information about the strengths and weaknesses of learning and learning [1]. Assessment is one of the most important in the learning process, because the learning process is the process of changing the behavior of an individual or individuals. A process of collecting, analyzing and interpreting the information to determine the level of achievement of learning objectives by students called assessment. Assessment of learning digital simulation is a very important part, because of this assessment teachers can assess students well. Efforts to improve the quality of education on Computer competency can be reached through an increase in the quality of learning and a quality systems assessment. The quality of learning can be seen from the results of the assessment.

Conversely, a good appraisal system, would encourage teachers to determine the right strategy and motivate students to learn better.

In the case of teachers, a good appraisal system which can give an idea of the quality of learning and can assist in planning learning strategies. If judged by the students themselves, a good appraisal system which can provide motivation to improve their skills. Through assessment (assessment), could obtain information that can be used in making decisions about curriculum, programs, schools, students and other education policy [5].

In authentic assessment, in addition to the attitude (affective) aspect, the competence of knowledge (cognitive) and competency skills (psychomotor) and a variety of instruments or test equipment used, we must also look at the input, process and output of students. Assessment of student learning outcomes should also be done at the beginning of learning (assessment input), during the study (assessment process), and after learning (output rating).

It can be concluded authentic assessment is used to assess the ability of students measurably, but not all teachers understand how to implement authentic assessment. On the curriculum in 2013 the constraints faced by teachers in the training curriculum of 2013, namely the problem of learning assessment, where teachers are still having trouble applying the concept of assessment 2013 curriculum in the learning process, because in the assessment of the learning curriculum of 2013, teachers were asked to interpret the values written on the learning activities until the end of the lesson.

2. Method

This research is the development of the use of Research and Development (R & D) design. Research and Development is a research model that is used to produce a particular product, and test the effectiveness of the product. This development study was designed to produce a product in the form of authentic assessment tool in the investigation of digital simulation based learning at grade class X TKJ SMK Negeri 05 Padang. Product development research consists of five phases / stages: 1) Analysis, 2) Design, 3) Development, 4) Implementation, and 5) evaluation. The instrument used in this study is a validation instrument, tool practicality and effectiveness of the instruments. [3] [4]

2.1 Validation of instruments

Instrument validation validation in sheet form used to collect data regarding the validity or failure of an authentic inquiry-based assessment instruments developed. Validation is done by experts in the field validator. Validation sheet will be filled by the first validator validated; validation sheet contains indicators to be assessed by the validators in the form of content appropriateness, feasibility of construction (the presentation component) and the components of language. Validation is done aims to rank, suggestions, and feedback on authentic assessment instruments developed.

2.2 Practicality questionnaire

Practical instruments are instruments used to collect information about authentic assessment practices developed. This instrument was a questionnaire responses of teachers in the practicality of any authentic instrument of assessment, so that researchers can find out how easy it is to use an authentic assessment of learning.

2.3 Instrument Effectiveness

These instruments were developed to collect the effectiveness of authentic assessment data. The instrument used to assess the effectiveness of authentic assessment is to use the test student learning outcomes. Effectiveness seen from the results of tests of learning in the form of attitudes, knowledge and skills. learning outcomes obtained by giving the test to students before and after using authentic assessment valid and practical.

3. Results and Discussion

3.1 Authentic Assessment Validation

Table 1. Results of practicality Lesson Plans & authentic assessment by Teacher

No	Item Assessed	Skor Validator			Σ s	Aiken 's V	Tot
		1	2	3			
A	Item 1	4	5	4	1	0625	Valid
	Item 2	5	4	5	1	0688	Valid
	Item 3	5	4	5	1	0688	Valid
	Item 4	5	5	5	1	0750	Valid
B	Item 1	5	5	5	1	0750	Valid
	Item 2	5	4	5	1	0688	Valid
	Item 3	5	5	5	1	0750	Valid
	Item 4	5	5	5	1	0750	Valid
C	Item 1	5	5	5	1	0750	Valid
	Item 2	5	5	5	1	0750	Valid
	Item 3	5	4	5	1	0688	Valid
	item 4	5	4	5	1	0688	Valid
	item 5	5	5	5	1	0750	Valid
Average value		5	5	5	1	.716	invalid

Validation authentic assessment carried out by the three validators. Validator 1 provides an average score of 5, 2 Validator provides an average score of 5, 3 Validator provides an average score of 5. From Table 4.3 above third validator validation results yield 0.716 validation value with a valid category.

3.2 Practicality Test Data

Practical testing of authentic assessment instruments carried on the teacher. Analysis of the practical results of teachers in authentic assessment are as follows:

Table 2. Results of practicality Lesson Plans & authentic assessment by Teacher

No	Practitioners	Practicality Value (%)	
		Learning Plan	Authentic Assessment
1	practitioners 1	93	91
2	practitioner 2	94	92
3	practitioners 3	93	90

Average	93	91
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In the table above can be seen that the average value of each instrument ranges from 91-93 authentic assessments that can be categorized as very practical. Based on input from SMK Digital Simulation Master N 05 Padang, authentic assessment instruments created can be used in day-to-day learning activities, and can be used as a guide to develop the instrument in the learning materials in SMK Negeri 05 Padang ..

3.3 Effectiveness Test Data

Effectiveness seen from KKM in a classical way by the method of time series. Table 3. Comparison of the overall student scores by calculating time series.

No	Meetings	Average Value	Description
1	Pre ₁	71.27	Not Completed
2	Pre ₂	71.18	Not Completed
3	Pre ₃	71.5	Not Completed
4	Pre ₄	72.41	Not Completed
5	Post ₁	82.41	Completed
6	Post ₂	82.41	Completed
7	Post ₃	82.41	Completed
8	Post ₄	82.41	Completed

4. Conclusions and Suggestions

Based on the results of the study "authentic assessment instrument development computer competence in students of SMK N 05 Padang in digital simulation study is to measure the ability of students" can be summed up as follows: 1) Authentic assessment instruments have been manufactured in Digital simulation study to measure the student's ability to use ADDIE method. Authentic assessment instrument consisting of competency assessment of attitudes, knowledge and skills competency assessment competency assessment; 2) Authentic instruments of assessment in learning Digital simulation is to measure the student's ability to meet the criteria developed valid. This is evidenced by completing stages of assessment given by expert lecturers to produce a valid assessment instrument Authentic; 3) Authentic assessment instruments in Digital simulation study is to measure the student's ability to meet the criteria developed practical. This is evidenced by the practical value given by the teacher are categorized very practical; 4) Authentic assessment instruments in Digital simulation study is to measure the student's ability to meet the criteria developed effectively. Aspect effectiveness can be seen in the results of the analysis of student learning outcomes by using time series and test-score gan.

Advice can be given of the research results for further research are: Conducting in-depth studies Authentic assessment in the learning development of the Digital Simulation and learning. Instrument development by adding more pictures to illustrate some of the statements and questions are more communicative.

5. References

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