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Assessment Profile of Character Based Online Practicum on the Basic Physics Practicum Course

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Abstract: *The purpose of this research is to know the description of the online practicum report in Physics Basic Physics I course on Physics at Universitas Muhammadiyah Makassar students and to know the validity, reliability, practicality, and effectiveness of assessment of Physics Basic Course I based on Universitas Muhammadiyah Makassar. This research is categorized as research and development, with the main reason that this development research focuses on the study of products in the form of physics-based physics assessment apparatus. The development model used in this research is a Four-D model. Where the design of this model includes four stages, namely define, design, development, and distribution. This research was conducted at Faculty of Teacher Training and Education (FKIP Universitas Muhammadiyah Makassar. The test subjects are divided into two (2) stages namely: 1) Develop stage is a student of Physics Education study program taking the first Physics lab course; 2) disseminate scene is Lecturer and Laboratory Assistant of Physics Education Program. The results of this study are assessed by assessment tools, assessment instruments, (2) revisions based on validator's assessment, suggestions, and comments, (3) field trials, and (4) revisions based on data analysis of test results, and sharing suggestions with laboratory assistants. Furthermore, the appraisal tool is declared eligible for use in limited socialization and based on the results of the analysis, the instrument of the assessment of the preparation of a character based report on the Basic Physics course is valid, reliable and practical.*

Keywords - *Assessment, Reporting, Character-Based, Basic Physics*

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I. Introduction

Education is one of the most fundamental factors in improving the quality of life. The Government of Indonesia has drafted the Law no. 20 of 2003 which regulates the education system of Indonesia. It states that the National Education functions to develop the capability, character, and civilization of the nation for enhancing its intellectual capacity, and is aimed at developing learners 'potentials so that they become persons imbued with human values which are faithful and pious to one and only God; who possess morals and noble character; who are healthy, knowledgeable, competent, creative, independent; and as citizens, are democratic and responsible.

The powerful education system in the Law makes all things related to education such as curriculum, learning, and assessment is prepared in harmony with the educational functions contained in the Law. Between the quality of the learning system and the quality of the assessment system are interrelated. A good learning system indeed produces a good quality of learning as well, and then the quality of learning will affect the results of the assessment of learning [1]. Therefore, improving the quality of learning should pay attention to these two systems.

The critical thing that underlies character education in Schools and Colleges is the cultivation of the nation's character values which will not succeed through the provision of information and doctrine. The character of the noble nation, good manners, kindness, cooperation, discipline, obeying the rules and so on, need the method of habituation and exemplary of all elements of education in Schools and Universities.

Based on the researchers' observation and information from lecturers, there are specific character pillars that need to be emphasized because they are considered very bad. Based on the results of the need assessment, the researchers limit 5 (five) characters to be developed in the process of reporting assessment at the Laboratory of Physics, Universitas Muhammadiyah Makassar. The characters are honesty, independence, and discipline.

In the assessment process, the lecturer only takes the assessment based on the student practicum report, while the assessment that measures the character of the students tends to be untouched until now. Assessment of students in the process practicum is not measurable. There is a need to develop a character-based practice report assessment tool in conducting Physics I. The assessment is expected to assist lecturers in providing students with a structured assessment.

II. Literature Review

1.1. Definition of Assessment

Assessment is the application of various ways and the use of various assessment tools to obtain information about the extent to which student learning outcomes or achievement of competence (range of ability) learners is [2]. Assessment answers the question of how well a student's achievement or achievement is. The results of assessment activities can provide optimal benefits if it is performed about the principles of assessment as established by formal guidance assessment of the government.

In general, the assessment is a process of collecting complete information about students and classes for teaching decision-making. Meanwhile, the assessment of the evaluation is the process of collecting various data that can describe student learning progress. The description of student learning development needs to be known by lecturers to ensure that students experience the learning process correctly.

Assessment is a procedure used to obtain information about learners' learning and the format of learning progress [3]. Moreover, the assessment is a process or formal attempting to gather information related to essential variables of learning as a material in decision-making to improve the process and learning outcomes [4].

1.2. Assessment in Learning

In conducting the assessment, assessment tools are required to collect information. The tools must be in accordance with the purpose of the assessment activity. There are some of the criteria of a useful assessment tool. First, it can provide information that will play a role in terminating improvements in learning. Second, it must be in accordance with the learning objectives. Third, it provides information about what learners know. Fourth, it completes the results of other assessments to provide a general description of what learners know [5].

Moreover, a comprehensive and sustainable assessment will be significant. It provides accurate information, motivates learners in learning, motivates educators in learning, and improves the quality of learning. The students focus on learning, while teachers or lecturers play an active role as facilitators, motivators, dynamics, directors and mentors, assessors and evaluators. Teachers or lecturers convey knowledge in specific aspects that are not yet available on referrals and other learning resources that learners can use as initial reading.

1.3. Assessment in Character Based Physics Practicum

Physics is a science that studies the substances and interactions of its components. It is well known to the general public that physics is one of the fields of science that is classified as "hard" or not easily understood. Physics is regarded as a subject with a collection of formulas that makes students with dizzying memories. The assumption is supported by the fact that many of the learners have physics values including the lowest among all subjects in School of Higher Education.

Most students still have difficulties in practicum, especially students in the first year [6]. Despite hundreds of physics books, maybe even thousands, but the students still have difficulty in learning physics.

III. Methods

This research is categorized as research and development, with the main reason that this development research focuses on the study of products in the form of physics-based physics assessment apparatus. The development model used in this research is a Four-D model. Where the design of this model includes four stages, namely define, design, development, and distribution.

This research was conducted at Faculty of Teacher Training and Education (FKIP) Universitas Muhammadiyah Makassar. The test subjects are divided into two (2) stages namely: 1) Develop scene is a student of Physics Education study program taking the first Physics lab course; 2) disseminate stage is Lecturer and Laboratory Assistant of Physics Education Program.

In this study data were collected in three ways. The first is cognitive techniques in which the initial data studied by students collected through online tests. The second is observation where the observation sheet is given to the assistant to measure the characters developed during the lab. The third is questionnaire where the student response questionnaire and the laboratory assistant response questionnaire were used to collecting the data. Data analysis techniques used in this study is as follows:

1) Expert validation analysis/expert
2) Reliability Analysis
3) Analysis of data on practicality
4) Review of effectiveness data
5) Analysis of student/practice response questionnaire data
6) Analysis of questionnaire data of lecturer's response/laboratory assistant.

IV. Results

In the preparation of report preparation of practicum reports developed journal-based reports and sent online. At this stage, the character of the student is the character of discipline, independent and honest by using the character assessment instruments.

Based on the results of the analysis using the Gregory test, obtained values for assessment instruments as presented in table 1 as follows:

Table 1. Recap Result of Validity and Reliability Analysis of Report Assessment Instrument

Assessment Instrument	Value		Criteria	
	Validity	Reliability (%)	Valid	Reliability
Report	0,98	98	Valid	Reliability

These results indicate that the assessment instrument of the report is in a valid category with a value of 0.98. The reliability value is 98% so that the device is categorized as reliable.

The report assessment instrument is used to identify the student's skills regarding title, abstract, background, problem-solving, writing objectives and benefits of experiments, theoretical basis, time and place, tools and materials, data analysis, discussion, drawing conclusions and lists library. Practical reports are submitted online to laboratory assistants at the predetermined time. Here is a recapitulation of the results of data analysis of the preparation of statements.

Table 2. Recapitulation of Report Value

No	Experiment Topics	Value(%)	Rubric
1	Motion and GLB	90.48	Very Good
2	Friction	82.80	Good
3	Simple Harmonic Motion	93.65	Very Good
4	Refraction	91.47	Very Good
5	Hooke's Law	92.33	Very Good
6	Massa type	80.42	Good
7	Ohm's Law	86.51	Good
8	Black Azas	92.53	Very Good
Average		88.77	Good

Based on the result of data analysis, the average value of the preparation of student report is right (B). The individual benefits can be seen in appendix 8.3. On the topic of motion and straight motion regularly there are 3 (three) students who get very bad value (AJ), friction force topics 3 (five) students get bad value (J), frictional style there are 2 (two) students who get value ugly (J), the topic of simple harmonic motion one (1) student receives a grade bored (J), the law of refraction two (2) students who receive a poor grade (J), the topic of the density of 2 (two) got very ugly, ohms law there are 2 (two) students get bad value (J). The following table presents a recapitulation of measured report characters on each experimental topic.

Table 3. Recapitulation of Report Character

No	Experiment Topics	Honest (%)				Independent (%)				Discipline (%)			
		AB	B	C	K	AB	B	C	K	AB	B	C	K
1	GLB and motion	37.03	55.55	3.70	3.70	25.9	55.5	3.70	3.70	11.11	66.67	11.11	7.40
2	Friction	85.18	14.81	0	0	70.37	29.62	0	0	40.74	37.03	18.51	0
3	GHS	14.81	85.18	0	0	0	100	0	0	0	92.59	7.40	0
4	Refraction	74.07	25.92	0	0	48.14	48.14	3.70	0	70.37	18.51	7.40	3.70
5	Hooke's Law	96.29	3.70	0	0	100	0	0	0	96.29	3.70	0	0
6	Massa type	0	92.59	7.40	0	0	92.59	92.59	3.70	18.51	77.78	0	3.70
7	Ohm's Law	3.70	92.59	3.70	0	100	0	0	0	66.66	33.33	3.70	0
8	Black Azas	0	70.37	29.62	3.70	0	74.07	25.92	0	0	81.48	18.51	0

Characters measured at the time of report preparation are honest, self-directed and disciplined student-based journals and submitted online.

The table above shows that the honest, independent and disciplined character of the student in preparing and sending the report is in an outstanding category (AB) and good (B) and enough C). The most excellent (AB) category for realistic characters is found on the hook law experiment topic; the highest independent style found on the hook legal topic and the most senior disciplinary figure also on the legitimate hook topic. The best (B) categories for the realistic characters are located on the topic of type mass experiments, independent characters on Hooke legal topics and disciplinary characters on the subject of this. The categories

less than the honest and independent characters of 3.70% are on the topic of motion and glib, density, black principal. Disciplined characters still contain 7.40% in fewer categories for motion topics and GLB.

V. Discussion

In the preparation of report preparation of practicum reports developed journal-based reports and sent online. At this stage, the character of the student is the character of discipline, independent and honest by using the character assessment instruments.

Based on the data of the assessment by two validators, ie, those who are considered experts in the field of physics and assessment obtained that the component of a character-based practicum assessment tool has an average value of the validator for the tool preparation of reports are located in the category valid. This means that concerning assessment aspects, the assessment tools developed to meet the criteria of validity.

An instrument is categorized as reliable category when the percentage of the agreement obtained greater than 0.75 or above 75% [7]. From the reliable analysis results, the character assumption assessment tools are included in the stable category, since the average reliable level obtained from the aspect of the reporting instrument is 98% and the presentation of the practicum results has a percentage of agreement of 100%. This indicates that the character-based practicum assessment tool is feasible for use in the Physics Basic lab course I.

The practicality of the device can be seen through student responses, laboratory assistant responses, and student activities during the lab. Assessment tools can be said to be practical if they can be used efficiently or applied by lecturers and assistants at the laboratory. The ease of use of assessment tools can be demonstrated in the positive response of the assistant and the practitioner.

Student responses to character-based practicum assessment tools have an average of 86.67 (very positive), and assistant responses have an average of 96.88 (very positive). The percentage of student activity during lab activities is 84.73 (excellent). Thus the practical tools that have been developed can be said to be practical. Thus, the assessment tools of practicum reports that have been developed can be stated to be practical.

The effectiveness of assessment tools can be seen from student activities, student responses to assessment tools, laboratory assistant responses to assessment tools and competency achievement tests.

The average student activity during lab activities is 84.73 (excellent). Student responses to character-based practicum assessment tools have an average of 86.67 (very positive), and assistant responses have an average of 96.88 (very positive). The achievement of competence obtained mean 84.343 and variance of 10,790. Thus, the assessment tools that have been developed can be said to be effective.

Practical reports are one of the media to communicate the results of science activities (in this case practicum) to other parties. Thus the report should describe the correct information by the results of the experiment. The report is journal-based and emailed to the laboratory assistant.

The assessment instrument of the practicum report can at least uncover students' abilities in terms of: stating the title, compiling the abstract, making the background, formulating the problem, writing down the objectives and benefits of the experiment, theoretical basis, time and place, tools and materials, data analysis, discussion, and bibliography. Characters that are measurable are honest, independent and disciplined characters.

VI. Conclusion

Based on the results of the analysis, the validity is 0.98. Therefore, the assessment of Character Based Online Practicum in Basic Physics I is stated valid. The reliability which is obtained is 98%. Therefore, the assessment of character based online practicum in the Basic Physics course I is stated reliable. In it also found that the instrument of assessment of the character based online practicum in the basic physics course is considered practical.

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