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Analysis of Development of Biology Teacher Performance Assessment to Assess Students in Practicum Activities

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ABSTRACT

Purpose of the study: This study aims to analyze the development of biology teacher performance assessments to assess students who are in practicum activities at SMA Negeri Batanghari Regency.

Methodology: This research is included in the quantitative descriptive research. The subjects in this study were biology teachers in class X and XI IPA at SMA Negeri 1 and 2 Batanghari Regency. The analysis carried out by the researcher included: performance task indicators, performance rubrics, and assessment methods. The research data was obtained from the results of observation sheets, self-assessment questionnaires and peer assessment questionnaires, as well as documentation.

Main Findings: Based on research on the analysis of the development of biology teacher performance assessments to assess students in practicum activities at SMA Negeri Batanghari Regency, the overall percentage results obtained were in a good category for SMA Negeri 1 (69.5%) and in a bad category for SMA Negeri 2 (48.4 %). Based on the overall results, it can be concluded that the biology teachers at SMA Negeri 1 and 2 have made performance assessments in practicum activities, but the performance assessments that have been made are incomplete. This is because the biology teacher still has not made clear performance assignments for each practicum activity to be carried out. In addition, the teacher in making rubrics did not include clear scoring.

Novelty/Originality of this study: It is expected that Biology teachers need to understand the importance of performance assessment in practicum activities by participating in training or seminars in order to achieve competence and goals in accordance with the educational curriculum.

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1. INTRODUCTION

Learning biology is an activity or vehicle that is carried out consciously and intentionally to increase knowledge, skills and responsibility to the environment [1]. The process of learning biology does not only occur in the classroom but outside the classroom or practical activities. Practical activities carried out to achieve the objectives of learning biology.

Practicum activities in learning biology have several objectives to develop basic scientific skills, to increase understanding of science concepts, as well as to improve problem solving skill [2]. To achieve the expected goals, namely students experiencing positive changes, it is necessary to hold a performance assessment.

Performance assessment is the process of collecting data by means of systematic observation to make decisions about individuals. Performance assessment requires students to explain their performance tasks using their knowledge and skills in the form of actions. Performance assessment is very appropriate when used in practicum activities because it is to assess student learning outcomes, build/form criteria to ensure that evaluations made do not cause errors and determine various skills that can shape student characteristics [3], [4].

According to Kunandar, with the performance assessment, teachers can get to know more deeply about the characteristics of each student, can motivate students to be more active, besides that in practice there is no opportunity for students to cheat [5]. Therefore, in order to be able to measure the performance of students properly, in making performance assessments it must be maximized, namely by paying attention to important matters or certain references.

Each practicum activity takes place, it is hoped that the teacher can carry out a performance assessment to the maximum, both from the manufacturing process and when observing students perform in activities, so that the objectives of the practicum activities are achieved. The task of the teacher in practicum activities must be able to prepare tools and materials, guide students in practicum activities, carry out the assessment process properly, and overcome obstacles when practicum activities take place [5], [6]. This study aims to analyze the development of biology teacher performance assessments to assess students who are in practicum activities at SMA Negeri Batanghari Regency.

2. RESEARCH METHOD

This research method is a quantitative descriptive research. This research is research that aims to explain existing phenomena by using numbers to base individual or group characteristics [7]. This study assessed the nature of the conditions present. The purpose of this study is limited to describing the characteristics of something as it is. The subjects in this study were biology teachers in class XI and biology teachers in class X IPA at SMA Negeri 1 and 2 Batanghari Regency. The data collection technique uses observation sheets and self-assessment questionnaires and peer assessments. Data analysis techniques using the formula:

$$P = \frac{\sum F}{\sum N} \times 100\%$$

Note: P = Percentage
ΣF = Score of respondent's answer
ΣN = Total score

3. RESULTS AND DISCUSSION

After observing the development of performance assessment by the biology teacher in the practical activities of class XI IPA at SMA Negeri 1 and 2 Batanghari Regency, the results are obtained in Table 1 below:

Table 1. Distribution of the results of the observation sheet for the development of biology teacher performance assessments to assess students in practicum activities at SMA Negeri Batanghari Regency

No.	Indicator	Descriptor	Percentage per descriptor (%)		Percentage indicator (%)	
			SMA Negeri 1	SMA Negeri 2	SMA Negeri 1	SMA Negeri 2
1.	Performance task	a. Determine the type of performance	75	50	70	45
		b. Create performance assignments	65	40		
2	Rubric performance	a. Create an assessment rubric	75	25	62.5	25
		b. Submit a performance assessment rubric	50	25		
3	Method	a. Determine the method of assessment	75	62.5	64.6	57.6
		b. Carry out an assessment	68.7	68.7		
		c. Provide scoring	50	41.7		

Table 1 explains that the distribution of scores for developing performance assessments by biology teachers in practicum activities for class XI IPA at SMA Negeri 1 and 2 Batanghari Regency, shows the result

that the lowest category lies in making a performance rubric. Based on the overall average results of observations on the development of performance assessments in Table 2.

Table 2. The results of the overall percentage of observation sheets for the development of biology teacher performance assessments for students in practicum activities at SMA Negeri Batanghari Regency

No	School name	Overall percentage yield (%)	Category
1.	SMA Negeri 1 Kabupaten Batanghari	65.9	Good
2.	SMA Negeri 2 Kabupaten Batanghari	51.1	Not Good

Based on the results of research on the development of performance assessment by biology teachers in practicum activities for class XI IPA at SMA Negeri 1 and 2 Batanghari Regency, a self-assessment questionnaire was used which was filled in by the biology teacher for class XI IPA totaling 27 statements. The results of the self-assessment questionnaire are as follows:

Table 3. Distribution of self-assessment questionnaire results for the development of biology teacher performance assessments to assess students in practicum activities at SMA Negeri Batanghari Regency

No.	Indicator	Descriptor	Percentage per descriptor (%)		Percentage indicator (%)	
			SMA N 1	SMA N 2	SMA N 1	SMA N 2
1.	Performance task	a. Determine the type of performance	75	75	71.9	57.8
		b. Create performance assignments	68.7	40.6		
2	Rubric performance	a. Create an assessment rubric	75	25	62.5	25
		b. Submit a performance assessment rubric	50	25		
3	Method Indicator	a. Determine the method of assessment	66.7	50	66.7	58.3
		b. Carry out an assessment	75	75		
		c. Provide scoring	58.3	50		

Table 3 explains that the distribution of scores for developing performance assessments by biology teachers in practicum activities for class XI IPA at SMA Negeri 1 and 2 Batanghari Regency, shows the result that the lowest category lies in making a performance rubric.

The overall results of the self-assessment questionnaire for developing performance assessments by biology teachers in practicum activities for class XI IPA at SMA Negeri 1 and 2 Batanghari Regency can be seen in Table 4.

Table 4. The results of the overall percentage of the self-assessment questionnaire for the development of biology teacher performance assessments to assess students in practicum activities at SMA Negeri Batanghari Regency

No	School name	Overall percentage yield (%)	Category
1.	SMA Negeri 1 Kabupaten Batanghari	69.4	Good
2.	SMA Negeri 2 Kabupaten Batanghari	51.8	Not Good

Pada penelitian ini digunakan instrumen penelitian lainnya yaitu angket penilaian sejawat yang diisi oleh guru biologi kelas X IPA yang berjumlah 15 pernyataan. Hasil angket penilaian sejawat tersebut sebagai berikut:

Tabel 5. Distribusi hasil angket penilaian sejawat pengembangan asesmen unjuk kerja guru biologi untuk menilai siswa pada kegiatan praktikum di SMA Negeri Kabupaten Batanghari

No.	Indicator	Descriptor	Percentage per descriptor (%)		Percentage indicator (%)	
			SMA N 1	SMA N 2	SMA N 1	SMA N 2
1.	Performance task	a. Determine the type of performance	75	75	83.3	58.3
		b. Create performance assignments	91.7	41.7		
2	Rubric performance	a. Create an assessment rubric	75	25	75	37.5
		b. Submit a performance assessment rubric	75	50		
3	Method Indicator	a. Determine the method of assessment	87.5	75	69.4	70.8
		b. Carry out an assessment	62.5	87.5		
		c. Provide scoring	58.3	50		

Table 5 explains that the distribution of scores for the development of performance assessment by biology teachers in practicum activities for class XI IPA at SMA Negeri 1 and 2 Batanghari Regency. The development of performance assessment at SMA Negeri 1 shows that the lowest category lies in the method of assessment, while the development of performance assessment at SMA Negeri 2 the lowest category lies in making a performance rubric.

The overall results of the peer-assessment questionnaire for the development of performance assessment by biology teachers in practicum activities for class XI IPA at SMA Negeri 1 and 2 Batanghari Regency can be seen in Table 6.

Table 6. Results of the overall percentage of peer assessment questionnaires for the development of biology teacher performance assessments to assess students in practicum activities at SMA Negeri Batanghari Regency

No	School name	Overall percentage yield (%)	Category
1.	SMA Negeri 1 Kabupaten Batanghari	70	Good
2.	SMA Negeri 2 Kabupaten Batanghari	48.3	Not Good

A performance task is a task that contains topics, task standards, task descriptions, and task completion conditions. Based on the results of observations on performance task indicators, it can be seen in Table 1, where SMA Negeri 1 obtained a percentage of 70% in the good category, because the class XI biology teacher had already determined the specific abilities that were important to be assessed so as to produce the best final results, after the teacher has sorted the criteria for the ability to be measured. The percentage obtained by SMA Negeri 2 is 45% in the not good category, because the class XI biology teacher is still very rare in making performance assignments, the teacher is only focused on the final assessment in the form of a portfolio.

Biology teachers should pay more attention to the importance of developing performance assessments in practicum activities, not only focusing on the final results, teachers must know the steps that must be taken in developing performance assessments so that they can measure the competence of students in accordance with the objectives of the practicum activities carried out. The steps that must be taken in the performance assessment are: 1). Determine KD to be assessed using performance appraisal techniques and their indicators, 2). identify all the important steps that are needed or that will affect the best end result, 3). Write down the behavior of the specific abilities that are important to complete the task and produce the best end result, 4). Formulate ability criteria to be measured, 5). Define clearly the criteria for the abilities to be measured, or the characteristics of the product produced, 6). Sort the ability criteria to be measured based on the order to be observed [5].

Based on the results of the self-assessment on the performance task indicators in Table 2, SMA Negeri 1 gets a good category with a percentage of 71.9% where the teacher has made performance assignments on the subject to be practiced, the teacher holds discussions in making performance assignments and uses references certain. This is in accordance with what Kunandar said that tasks for performance appraisal must meet several quality references, including: 1). The performance task directs students to show the achievement of learning outcomes, 2). Performance tasks can be done by students, 3). Include time for completing assignments, 4). In accordance with the level of development of students, 5). In accordance with the scope of the curriculum, 6). Duties are fair. Meanwhile, SMA Negeri 2 received a bad category with a percentage of 57.8%, where the teacher still had not made performance assessments on all the topics that were practiced because the teacher did not only teach biology, making it difficult to allocate time for performance assessments [5].

Based on peer assessments filled out by class X IPA teachers at SMA Negeri 1, they obtained a percentage of 83.3% in the very good category because the teacher often conducts discussions and has attended training on performance assessment, so the teacher can compile or make performance assessments at the subject matter that will be practiced even though it is not yet complete, while in SMA Negeri 2 it gets a percentage of 58.3% in the not good category, because teachers are still very rare in making performance assignments, teachers at this school still have difficulty preparing performance assessments because they have never attended training on performance assessment and also did not have a guidebook for preparing performance assessments.

The performance rubric is a rubric that contains the components of an ideal performance, and the descriptors of each of these components. Based on the results of observation and self-assessment on the performance rubric indicators in SMA Negeri 1, the results were the same, namely in the good category with a percentage of 62.5% because the teachers in both schools had made clear descriptors for each rubric with the scoring, teachers in SMA Negeri 1 had create a performance rubric based on the sequence of performance steps so that it can measure students' abilities. This is in accordance with Kunandar's opinion including: 1). The rubric contains a set of indicators to assess certain competencies, 2). The indicators in the rubric are sorted based on the sequence of work steps on the task or systematically on the work of students, 3). Rubric can measure the ability of students 4). Rubrics can map learners. The observation and self-assessment sheet for this indicator SMA Negeri 2 gets the same percentage as the very bad category of 25%, because not all of the topics that will be practiced have a rubric, and the rubric that has been made is not complete, because the rubric is not accompanied by scoring clear [5]. Every topic that is practiced should have a rubr ik performance appraisal and is accompanied by scoring this is in accordance with the opinion of Kunandar (2014: 269), that in making a rubric accompanied by clear scoring for decision making.

Based on peer assessments filled out by class X science biology teachers at SMA Negeri 1 on the performance rubric indicator, a percentage of 75% was in the good category. This is because the biology teacher at SMA Negeri 1 held a discussion on making a performance rubric, the teacher worked together in making a performance assessment using the references used. In addition, before the practicum activities are carried out the teacher conveys the assessment rubric to students. This is in accordance with the opinion of Kunandar, that the teacher must convey the rubric before carrying out the assessment to students [5]. Meanwhile, SMA Negeri 2 received a very bad category of 37.5%, because the teacher during the practicum did not present the rubric, only explained the subject matter of the practicum activities.

Based on the observation sheet on the assessment method indicator, a percentage of 64.5% is in the good category, because the teacher has made a good performance assessment, which can be seen from the scoring and clear description of each aspect, in accordance with Muchlich's opinion that conducting an assessment can use three one way is by giving a score to the aspects that contribute to a performance [9]. Whereas in SMA Negeri 2, the category was not good with a presentation of 57.6%, because the performance evaluation of students in practicum activities was not accompanied by the giving of scores and explanations for each aspect.

Based on self-assessment on this indicator, SMA Negeri 1 got a good category with a percentage of 66.7%. This is in accordance with the results of observations, where the teacher has made a clear assessment. Meanwhile, SMA Negeri 2 received a good category with a percentage of 58.3%, because the teacher at that SMA had also carried out an assessment, although they were not given full information.

Based on peer assessment on indicators of how to evaluate, SMA Negeri 1 got a good category with a percentage of 69.4% and SMA Negeri 2 also got a good category with a percentage of 70.8%, because the teacher had done a good assessment, where the teacher observed the performance of the participants students from the beginning to the end of the practicum both individually and in groups.

4. CONCLUSION

From the results of research conducted regarding the development of biology teacher performance assessments to assess students in practicum activities at SMA Negeri 1 and 2 Batanghari Regency, it can be concluded that the SMA Negeri has developed performance assessments even though it is not optimal. The development of performance assessment in SMA Negeri 1 as a whole has been carried out well, where it can be seen that the teacher has made performance assignments on the subject that will be practiced, besides that the teacher has also made an assessment rubric on each aspect accompanied by clear scoring. Whereas in SMA Negeri 2 Batanghari Regency the overall performance assessment development was not good, because the teacher still had not made performance assignments on each subject that was practicumed, the rubric that had been made was also not accompanied by information on each aspect, besides that the rubric did not include the scoring that was clear.

REFERENCES

[1] S. Rakhmawati, N. Muspiroh, and N. Azmi, "Analisis Pelaksanaan Kurikulum 2013 Ditinjau dari Standar Proses dalam Pembelajaran Biologi Kelas X di SMA Negeri 1 Krangkeng," *Sci. Educ. J. Sains dan Pendidik. Sains*, vol. 5, no. 2, pp.

156–164, 2016.
[2] S. Saharuddin and M. Wahab, "Analisis Kesulitan Dalam Pemebelajaran Ipa Di Smp Negeri Limboro," *J. IPA Terpadu*, vol. 2, no. 2, pp. 75–83, 2019, doi: 10.35580/ipaterpadu.v2i2.11148.
[3] Wahyudi, "Assesment Pembelajaran Berbasis Portofolio di Sekolah," *J. Visi Ilmu Pendidik.*, vol. 2, no. 1, pp. 288–297, 2012, doi: 10.26418/jvip.v2i1.370.
[4] I. Susanti, "Analisis Sikap Dan Minat Siswa terhadap Pembelajaran Fisika di SMA," *SchrödingerJournal Phys. Educ.*, vol. 1, no. 4, pp. 117–120, 2020, doi: 10.37251/sjpe.v1i4.447.
[5] Kunandar, "*Penilian Autentik (Penilaian Hasil Belajar Peserta Didik Berdasarkan Kurikulum 2013*)," Jakarta. PT. Rajagrafindo Persada, 2014.
[6] M. Z. Fanani, "Strategi Pengembangan Soal Hots Pada Kurikulum 2013," *Edudeena*, vol. 2, no. 1, pp. 57–76, 2018, doi: 10.30762/ed.v2i1.582.
[7] A. Rahayu and D. D. Romadona, "Deskripsi Implikasi Sosial dari Fisika , Sikap Terhadap Penyelidikan dalam Fisika dan Adopsi dari Sikap Ilmiah," *SchrödingerJournal Phys. Educ. (SJPE*, vol. 1, no. 1, pp. 13–17, 2020.
[8] Sugiyono, *Metode Penelitian dan Pengembangan*. Bandung: Alfabeta, 2015.
[9] Muslich, M, " *Authentic Assessment: Penilaian Berbasis Kelas dan Kompetensi*," Bandung: PT. Refika Aditama, 2011.