

Analysis of Difficulties Faced by High School Biology Teachers in Pringsewu Regency in Implementing Non-Test Assessments

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Abstract. Assessment plays a crucial role in achieving learning objectives. The use of non-test assessments is still limited to the affective and psychomotor domains, whereas in science, particularly biology, assessment should cover all three domains to make the learning process meaningful. This research uses a qualitative descriptive method. The population consists of SMA Negeri 1 Ambarawa, SMA Negeri 1 Pardasuka, and SMA Negeri 1 Pagelaran, with purposive sampling as the sampling technique. Data collection techniques include interviews, observations, questionnaires, and documentation. Data validity is ensured through triangulation of data sources. Data analysis involves data reduction, data presentation, and drawing conclusions. The results of data collection through questionnaires show an average difficulty level. The observation results indicate no evidence of attached portfolios and projects. Meanwhile, interviews reveal difficulties due to a large number of students, limited time allocation, challenges in remembering each student's attitude, difficulties in assessing self-honesty and peer assessment, the absence of specific instruments, many points to be assessed, complex instruments, insufficient socialization in instrument creation, lack of knowledge about IT, old age of teachers, and limited practical tools and materials.

1 Introduction

The quality of education is influenced by various factors [1], including students, teacher quality, curriculum, infrastructure, educational environment, content, processes, and outcomes [2–4]. Efforts to improve the quality of education can be achieved through the quality of teaching and assessment systems, which are interrelated [5]. A good learning system will result in good educational quality, which can be assessed through its assessment results [6]. Effective assessment encourages teachers to determine appropriate teaching strategies and motivates students to learn more diligently [7,8].

Assessment is an effort to obtain information about the stages and results of learning with the aim of assessing the extent of students' achievements in relation to learning outcomes

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[9,10] Assessment allows teachers to collect relevant information on students' outcomes or progress, enabling them to determine students' interests and assess their learning processes [5,11]. Assessment is a crucial component in the teaching and learning process, and teachers should implement assessment throughout the learning process [12,13].

Assessment plays a vital role in achieving learning objectives [14],[15]. Basically, assessment can be done in two ways: through tests and non-tests [16,17]. Generally, teachers in schools tend to use test assessments more than non-test assessments [18]. The use of non-test assessments is still limited, especially in the affective and psychomotor domains. However, in science, particularly in biology, assessment should cover all three domains simultaneously for the learning process to be meaningful [13,19,20]. Non-test assessments are used to assess learning outcomes using non-examination techniques aimed at obtaining assessment reports from the affective (attitude) and psychomotor (skills) domains [21]. Non-test assessments are used to measure aspects related to soft skills, especially those related to what students can create or do [22]. Given the importance of using non-test assessments, especially in biology, the author aims to conduct research on the analysis of difficulties faced by high school biology teachers in Pringsewu Regency in implementing non-test assessments.

2 Research Methodology

This study employs a qualitative research design with a descriptive approach. The population consists of SMA Negeri 1 Ambarawa, SMA Negeri 1 Pardasuka, and SMA Negeri 1 Pagelaran. The sampling technique used is purposive sampling, considering biology teachers in the three high schools, resulting in two samples from each school. Data collection methods include interviews, observations, questionnaires, and documentation. Data validity is ensured through triangulation of data sources. The data analysis follows the Milles and Huberman model, involving three stages: data reduction, data presentation, and conclusion drawing [23].

3 Results and Discussion

3.1 Result

Based on the research conducted at three State Senior High Schools in Pringsewu Regency, namely the biology teachers of SMAN 1 Ambarawa, SMAN 1 Pardasuka, and SMAN 1 Pagelaran, the obtained results are as follows:

Table 1. Biology Teachers' Questionnaire Results

No	Respondent	Total Score	Percentage	Criteria
1.	G1 (Teacher SMAN 1 Ambarawa)	25	62,5	Difficult
2.	G2 (Teacher SMAN 1 Ambarawa)	30	75	Difficult
3.	G3 (Teacher SMAN 1 Pardasuka)	35	87,5	Very Difficult
4.	G4 (Teacher SMAN 1 Pardasuka)	29	72,5	Difficult
5.	G5 (Teacher SMAN 1 Pagelaran)	34	85	Very Difficult
6.	G6 (Teacher SMAN 1 Pagelaran)	35	85	Very Difficult
Average			78	Difficult
Average			78,3	Difficult

Source Criteria Percentage: [24]

Table 2. Biology Teachers' Observation Results

No	Observation		SMAN 1 Ambarawa	SMAN 1 Pardasuka	SMAN 1 Pagelaran
1	Lesson Impleme ntation Plan	There is a task format involving the skills of students in creating a product.	✓	✓	✓
		There is a task format for applying students' knowledge in the form of a project within a specific period/time	✓	✓	✓
		There is a task format for the performance demonstration of students based on the Competency Standards achieved through biology practices.	✓	✓	✓
2	Assessm ent Book	Assessment of affective and psychomotor domains are combined into the cognitive domain assessment column	✓	✓	✓
3	Portfolio Compila tion	There is evidence of an attached portfolio for the non-test assessment of the psychomotor domain	-	-	-
		There is evidence of the non-test assessment results in the psychomotor domain through the creation of a product	✓	✓	✓
		There is evidence of non-test assessment results in the psychomotor domain through a performance demonstration based on the basic competencies achieved through biology practices	✓	✓	✓
		There is evidence of non-test assessment results in the psychomotor domain through a project	✓	-	-

Table 3. Biology Teacher Interview Results

No	Teacher	Competence	Challenges Faced by Teachers in Implementing Non-Test Assessments
1.	Biology Teacher SMAN 1 Ambarawa	Affective Domain (observation, self- assessment, peer assessment, journal)	1. Large number of students
			2. Limited instructional time
			3. Difficulty for teachers to recall the display of attitudes for each student.
			4. Challenges for teachers in assessing the honesty of students through self-assessment and peer assessment

No	Teacher	Competence	Challenges Faced by Teachers in Implementing Non-Test Assessments
2.	Biology Teacher SMAN 1 Padasuka	Psychomotor Domain (performance assessment, projects, products, and portfolios)	1. Large number of students.
			2. Limited instructional time
			3. Tools and materials for practical activities in this assessment are limited
		Affective Domain (observation, self-assessment, peer assessment, journal)	1. Suboptimal number of students per class
			2. Insufficient instructional time.
			3. Teachers cannot accurately assess the actual display of attitudes for each student.
			4. Lack of specific instruments such as observation sheets, self-assessment, peer assessment, and journals.
			5. Too many aspects to assess in attitude evaluation, leading to infrequent assessments
			6. Instruments are overly complex
			7. Limited socialization about creating non-test assessment instruments, with more focus on cognitive assessment
		Psychomotor Domain (Performance Assessment, Projects, Products, and Portfolios)	1. Suboptimal number of students
			2. Limited instructional time.
			3. Restricted tools and materials for practical assessments.
			4. Teachers minimize tasks for students due to tight school schedules
			5. Psychomotor assessment instruments are more complicated
			6. Lack of socialization and training on non-test assessments in the psychomotor domain
3.	Biology Teacher SMAN 1 Pagelaran	Affective Domain (observation, self-assessment, peer assessment, journal)	1. A considerable number of students.
			2. More instructional time is focused on cognitive assessment.
			3. Teachers have difficulty remembering the behavioral display of each student.
			4. During affective assessment, there are no specific instruments created, such as observation sheets, self-assessment, peer assessment, and journals
			5. Lack of teacher knowledge about IT due to an older age
		Psychomotor Domain (performance assessment, projects, products, and portfolios)	1. A considerable number of students.
			2. More instructional time is focused on assessing students' knowledge.
			3. Limited availability of tools and materials for practical assessments.
			4. Teachers reduce tasks for students due to a full-day school schedule
			5. Psychomotor assessment requires a significant amount of time
			6. Teachers are no longer young
			7. Lack of knowledge about technology

No	Teacher	Competence	Challenges Faced by Teachers in Implementing Non-Test Assessments
			8. Lack of socialization and training on non-test assessments in the affective and psychomotor domains

3.2 Discussion

Assessment plays a crucial role in achieving learning objectives. Essentially, assessment can be conducted in two ways: through tests and non-tests. In general, teachers in schools tend to use test assessments more than non-test assessments. The use of non-test assessments is still limited, even though science, especially biology, encompasses cognitive, affective, and psychomotor domains that should be assessed simultaneously for the learning process to be meaningful.

Based on the research conducted through questionnaire data collection, the results obtained had an average difficulty level. In the observation data collection technique, there was no evidence of attached portfolio, and there was no evidence of non-test assessment results in the psychomotor domain through projects. In the interview data collection technique, results were obtained in the affective domain, namely a large number of students, limited learning time allocation, teacher difficulty in recalling the attitudes of each student, teacher difficulty in assessing the honesty of students through self-assessment and peer assessment. During affective assessment, there was no specific instrument used, too many points to be assessed, so teachers rarely conduct this type of assessment. The instrument is too complicated, socialization regarding the creation of non-test assessment instruments is lacking (more focused on cognitive assessment), and the lack of knowledge about IT due to the older age of teachers.

The affective domain involves assessing attitudes and values, covering behavioral traits such as feelings, interests, attitudes, emotions, and values [25]. The challenge in assessing the affective domain (attitude) is the large number of students. The more students there are, the more difficult it is for teachers to assess the attitudes of each student. In this regard, teachers also find it challenging to recall the display of attitudes for each student. Therefore, for attitude assessment, teachers usually give uniform grades between students, making the assessment less objective. This is consistent with research stating that teachers cannot constantly monitor and assess students' attitudes with a large number of students in one class. In affective assessment, there are many points that need to be assessed [26]. Nuriana expresses that challenges for teachers in assessing students' attitudes in Madrasah Aliyah Subang include time constraints, a considerable number of students in one class, and difficulties in guiding students to develop attitudes in line with learning objectives [27].

Limited time allocation is one of the challenges in implementing non-test assessments due to the numerous indicators that need to be measured. Biology teachers state that they don't use non-test assessments much in the affective domain but primarily use them for cognitive domain assessments. This aligns with Nabilah's research, stating that the majority of teachers complain about difficulties in managing time related to teaching assignments and assessments. When teaching, teachers often focus only on teaching activities, so attitude assessments do not proceed optimally. This situation results in disturbances to the objectivity of assessments, where some students receive better attention, while others may not be observed well [28]. Time management becomes a crucial factor in implementation, and the large number of students in a class is one of the challenges for teachers in conducting assessments. Teachers become less focused because they have to observe all students, while also having the duty to deliver material. As a result, many teachers assess students' attitudes based on the exhibited attitudes only [29]

Complicated instruments for assessing the affective domain are one of the difficulties in implementation. This is consistent with Hajaroh's research, stating that teachers have difficulty setting assessment criteria due to the complexity of various aspects that focus on assessment. This confusion leads to teachers' challenges in evaluating students according to the aspects and learning indicators. Determining assessment scores is also a challenge because teachers need to give scores that reflect students' achievements objectively and provide scores in line with their abilities. However, sometimes teachers face difficulties in giving scores because some students experience delays in the learning process. Teachers also face challenges in time management due to the many aspects focused on assessment and the number of students to be evaluated. As a result, teachers find it challenging to evaluate efficiently. Additionally, differences in character among students become an additional obstacle since each individual has different characters and learning styles [30]. Some teachers sometimes do not prepare rubrics and affective assessment formats before conducting affective assessments. Consequently, the indicators to be assessed become less clear. Moreover, some teachers only conduct affective assessments by taking cognitive scores obtained by students in daily quizzes, mid-term exams, and final exams, then considering them as affective scores without conducting genuine affective assessments [31].

The psychomotor domain is related to skills or the ability to perform actions after individuals have experienced specific learning experiences [32]. The difficulties faced by biology teachers in implementing psychomotor assessments are not much different from non-test assessments in the affective domain, such as a large number of students, limited learning time allocation, limited tools and materials for practice, complicated psychomotor assessment instruments, lack of socialization and training for psychomotor domains, the older age of teachers, and a lack of knowledge about technology.

Biology teachers find it difficult, and there is a lack of time allocation in using practical and product assessment instruments, while portfolio and performance assessments are rarely used. This aligns with Ma'ruf's research, which indicates a lack of using performance and portfolio assessment techniques due to teachers' limitations in observing students' performance because of their large number and inadequate student abilities [33]. This is reinforced by Sari's research, indicating a lack of training attended by teachers, limiting their knowledge of non-test assessments. Inconsistent training and mentoring also become other factors. Additionally, the large number of students in each class causes teachers to assess and observe each aspect of attitudes, taking a considerable amount of time. Limited learning time is also a constraint, especially when teachers have to evaluate various student competencies individually during the learning process. The overlapping schedules of school activities and study times also complicate the evaluation process. Furthermore, the presence of moving classes in some schools adds to the time adjustment (aperception) that takes longer. Finally, the lack of facilities for performance assessments, such as laboratory practicums, is also a problem faced [34]. The limitation of teachers in mastering technology knowledge results in their difficulties in administration. Factors such as age and lack of socialization about technology also affect teachers' abilities in this regard [29].

4 Conclusion

Based on the conducted research, it can be concluded that, according to the survey results of teachers implementing non-test assessments, the average difficulty level is obtained. Observational findings indicate a lack of evidence of portfolio and project attachments, while interview results reveal challenges in the affective domain. These challenges include a large number of students, limited time allocation, difficulty in recalling the attitudes of each student, challenges in assessing honesty in self-assessment and peer assessment. Other difficulties in the affective domain involve the absence of specific instruments, the

complexity of assessment criteria, lack of socialization in instrument development, insufficient knowledge of IT, and the age factor, as teachers are no longer young. In the psychomotor domain, challenges in implementing assessments include a large number of students, limited time allocation, limited tools and materials for practical activities, complex assessment instruments, lack of socialization and training, older age of teachers, and a lack of knowledge about technology. Addressing these challenges requires concerted efforts such as further training, providing adequate resources, and enhancing teachers' understanding of technology.

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