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The Analysis of Biology Learning Assesment Implementation in Jepara High School During Covid-19 Pandemic

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Abstract

The Covid-19 pandemic has changed education that was previously conducted face-to-face to online learning. However, it is still necessary to conduct a learning assessment to determine student learning achievement. This study aims to describe the application of assessment in Biology learning in 3 public high schools in Jepara Regency. This research is a descriptive research with a qualitative approach. Data were taken by means of document analysis, observation and interviews. Data were analyzed using the Milles & Huberman model which consisted of data reduction, data presentation and conclusion drawing. The results of this study indicate that the biology teachers of SMAN 1 Mayong, SMAN 1 Pecangaan and SMAN 1 Welahan have compiled a complete lesson plan and online learning assessment instrument. Assessment techniques used in online learning vary from multiple choice, essay questions, simple practicum, independent projects and portfolios. While the online assessment applications used by teachers include google form, quizizz, google classroom, Microsoft teams. The teacher begins learning by providing material to be explained to students, but when a more specific explanation is needed, the teacher usually uses the help of a learning video or video conference using the Zoom Meeting application or Google Meet. Cognitive, affective and psychomotor assessments can be carried out by teachers in online learning.

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INTRODUCTION

The Covid-19 pandemic has had an impact on the world of education. Learning that is usually done face-to-face in schools must shift towards distance learning or e-learning. E-Learning is a learning activity that is carried out individually or in groups that is done online or offline via a network or computer technology and other electronic devices. This learning model is flexible which allows e-learning participants to learn more freely and anywhere (Naidu, 2006). Lee et al. (2011) and Yuliani et al. (2020) defines e-learning as an information system that can integrate various kinds of teaching materials (via audio, video, and media text) delivered via email, live chat sessions, online discussions, forums, quizzes, and assignments. To find out the achievement of student learning outcomes, it is necessary to conduct an assessment. According to Weni et al., (2017) assessment in an educational program has an important position in addition to the curriculum and learning process. Assessment is expected to be able to see all aspects of competence possessed by students. Every student since birth has brought his own talent so that lessons will be more effective if adapted to the existing nature (Asrul et al. 2014). Technological developments have contributed to the field of educational assessment, one of which is known as the learning management system (LMS). LMS creates a variety of ways to deliver instruction and provides electronic resources for student learning. Some methods, such as using Web pages to convey text in much the same way are very familiar to academics. The existence of the internet also supports the delivery and use of multimedia elements, such as sound, video, and interactive hypermedia (Masa'deh et al. 2016; Tarhini et al. 2016). The assessment used to measure the ability of students more comprehensively is an authentic assessment, which is a form of assessment that requires students to be able to apply it to the real world. This means that the learning carried out is not only theoretical but also looks at the practical aspects (Dimmitt, 2010). Kunandar (2013) and Reynolds & Kearns (2017) states that authentic assessment is an activity to assess students that emphasizes the overall assessment activity, both process and results with various assessment instruments, so that teachers can know the competence of students so that the competencies measured do not only focus on the cognitive domain. According to the Minister of Education and Culture Number 104 of 2014 that authentic assessment is a form of assessment used to measure aspects of attitudes, knowledge and skills obtained from learning by applying theory as well as applying it through assignments or projects. Affective assessment is an assessment of the behavior tendencies of students as a result of education, both inside and outside the classroom. Attitudes that students need to have include being able to be sensitive to the environment, able to find out what they find, what they don't know and students are expected to be able to act and solve problems that exist in their environment with their own abilities (Suryani, 2016). Cognitive assessment focuses more on knowledge competence reflecting scientific concepts that must be mastered by students during the teaching and learning process (Kunandar 2013). According to Asrul et al. (2014) and Gardner (2000), the realm of knowledge or cognitive is a realm that includes thinking activities. Cognitive domain is a domain that includes mental activities. Bloom grouped cognitive domains into six categories from the simplest to the most complex and assumed to be hierarchical, which means that goals at a high level can be achieved if goals at a low level have been mastered. Revised Bloom's Taxonomy includes: remembering (C1), understanding (C2), applying (C3), analyzing (C4), evaluating (C5) and creating (C6) (Setiadi, 2016). According to Asrul et al. (2014), assessment of skills or psychomotor is a measurement made by observing the activities of students in doing something. This assessment is suitable to be used to assess the achievement of competencies that lead students to show performance. The implementation of the assessment on e-learning during the Covid-19 pandemic needs to be known about the implementation process. Therefore, this study aims to describe how the implementation of Biology learning assessment during the Covid-19 pandemic in Jepara started from the planning, implementation and assessment stages?

METHODS

This study uses a qualitative approach with a descriptive method. The subject of this research is a public high school in Jepara that carries out online learning and assessment. Sources of research data include primary data and secondary data. Primary data was obtained through interviews and observations, while secondary data was obtained from the analysis of teacher assessment documents. The validity of the data was tested through triangulation of sources and methods. Source triangulation was carried out on data collection from various public high schools in Jepara, while the method triangulation used interview, observation and document analysis techniques. In testing the validity of the data, it was carried out through the stages of data collection, data reduction and drawing conclusions.

RESULTS AND DISCUSSION

The results of the analysis of the completeness of the teacher learning tool documents which include lesson plans and assessment tools in three high schools in Jepara (SMAN 1 Mayong, SMAN 1 Pecangaan and SMAN 1 Welahan) show that all teachers have been able to develop learning tools using e-learning mode. This can be seen in Table 1.

Table 1. The results of the observation of the completeness of the learning assessment document

No	E-learning Assessment Document	SMAN 1 Mayong	SMAN 1 Pecangaan	SMAN 1 Welahan
1.	Rating Instructions	Available	Available	Available
2.	Rating grid	Available	Available	Available
3.	Item analysis	Available	Available	Available
4.	Assessment rubric	Available	Available	Available
5.	Scoring Guidelines	Available	Available	Available
6.	Online assessment training participation	follow	follow	follow
7.	Types of supporting digital materials	Module + video	Module	Module

The teacher has written clear assessment instructions that assist the teacher in carrying out the assessment. The grid, scoring rubric and scoring guidelines have been prepared by the teacher on the assessment instrument. With training held by the school and from outside the school such as MGMP and examples of teaching tools from government websites such as "teacher sharing" assist teachers in compiling learning tools and their assessments. Assessment tools covering the cognitive, affective and psychomotor domains have been able to be arranged by teachers using e-learning mode.

Biology learning assessment method during the Pandemic

The teacher's learning assessment is contained in the learning device document along with the assessment instrument. In addition, the data was also confirmed through interviews with teachers and students. The results of the analysis of learning device documents and assessment instruments confirmed by teacher and student interviews are presented in Table 2 below.

Table 2. Results of the analysis of Biology learning assessment documents

No	Document components	SMAN 1 Mayong	SMAN 1 Pecangaan	SMAN 1 Welahan
1.	Online scoring platform	Quizizz, WA Group, Google Classroom, Youtube, Microsoft Teams, Google Meet	Google form, Google Meet, Google Classroom, Youtube, WA Group	Google classroom, telegram, WA Group, Youtube
2.	Cognitive assessment techniques	Multiple Choice Test	Multiple Choice Test	Essay
3.	Psychomotor assessment techniques	Practical videos	Product/work composer	Field practicum report
4.	Affective assessment technique	Presence and discipline	Presence and discipline	Presence, activeness and discipline

Table 2. explains that the e-learning Biology learning communication media is carried out by the teacher using short message techniques using the Telegram Group and Whatsapp Group platforms. As for virtual meetings, teachers use the Google Meet and Zoom Meeting platforms. However, there are still various other applications that teachers use in learning as described in Figure 1.

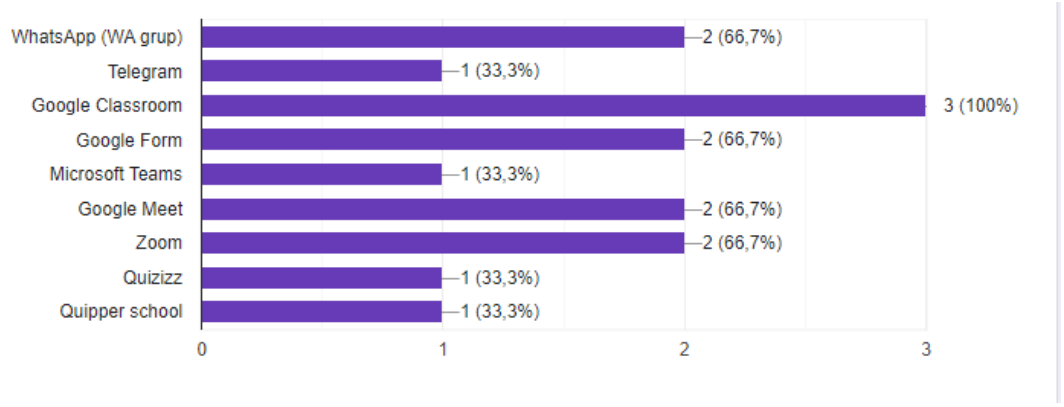

Figure 1. Diagram of the use of e-learning applications and their assessment

In addition to learning applications, in the diagram above there are also special applications for assessment such as *Quizizz* and *Google Forms*. While the assessment techniques in the cognitive, affective and psychomotor domains are carried out by teachers using various types of assessment techniques. The results of the recap of the assessment technique are presented in Figure 2 below.

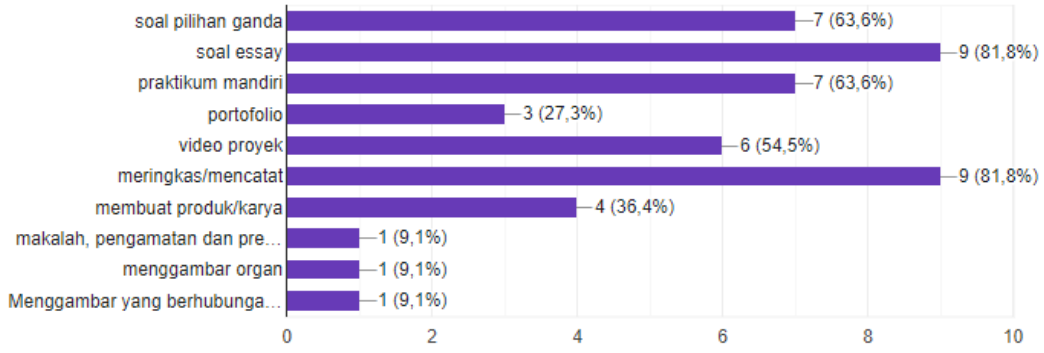

Figure 2. Diagram of the assessment technique applied by the teacher

Implementation of Biology learning assessment during the Pandemic

The implementation of the Biology learning assessment was carried out through field observations and interviews with teachers. The results of the learning observations of Biology teachers in Jepara which have been confirmed by interviews with teachers are presented in Table 3 below.

Table 3. Implementation of Biology learning assessment

No	The completeness of document	SMAN 1 Mayong	SMAN 1 Welahan	SMAN 1 Welahan
1.	The learning platform can be accessed by teachers and students	Accessible	Accessible	Accessible
2.	Assessment platform accessible to students	Accessible	Accessible	Accessible
3.	The teacher explains the cognitive assessment instructions	Yes	Yes	Yes
4.	Teacher guides cognitive assessment	Yes	Yes	Yes
5.	The teacher assesses the results of cognitive assessment	Yes	Yes	Yes
6.	The teacher explains the cognitive assessment instructions	Yes	Yes	Yes
7.	Teacher guides cognitive assessment	Yes	Yes	Yes
8.	The teacher assesses the results of cognitive assessment	Yes	Yes	Yes
9.	The teacher assesses students' attitudes/affectiveness	Yes	Yes	Yes

Table 3. explains that the implementation of learning carried out by teachers begins with virtual face-to-face introductions using video converence platforms such as Google Meet and Zoom Meeting. This virtual face-to-face meeting is intended so that teachers can find out the characteristics of their students, as well as introduce an online learning system that will be implemented in that semester during the Pandemic. Face-to-face online meetings are also intended to motivate students to keep learning even though learning is done online. For follow-up meetings, teachers use online class groups via the WA group platform and telegram by distributing digital modules in power point and pdf formats. The teachers will explain briefly about the material and then the students will ask questions in the online class group. At the end of the lesson the teachers will give assignments to the students.

Student learning outcomes in online learning

Student learning outcomes include cognitive, affective and psychomotor domains. From the student Biology learning outcomes documents obtained from each Biology teacher at three schools, it shows that all students can collect cognitive and psychomotor assignments even in a pandemic condition. This can be seen in Table 4 below.

Table 4. Achievement of students' biology learning outcomes

No	Rating Type	SMAN 1 Mayong	SMAN 1 Welahan	SMAN 1 Welahan
1.	Cognitive assessment task achievement	100 %	100 %	100 %
2.	Affective assessment achievement	100 %	100 %	100 %
3.	Achievement of Psychomotor Assessment Tasks	100 %	100 %	100 %

Table 4 was confirmed through interviews with the students. The results of interviews with students from 3 schools showed that students' assignment collection was achieved by 100% for tasks that assessed cognitive and psychomotor aspects. Students also said that the teacher assessed student behavior in online learning through participation in online study groups, video conference meetings and the discipline of collecting assignments. The results of this study provide information that the implementation of authentic assessments (cognitive, affective and psychomotor) can be carried out in online learning or e-learning at the high school level in Jepara. Teachers and students enthusiastically participated in online learning and did not experience many obstacles in implementing this model learning. The success of online learning or e-learning cannot be separated from good learning planning from the teachers. Khusniyah et al. (2019) states that online learning is effectively applied in learning if the teacher is able to apply the right learning approach according to student needs. The role of the teacher at the beginning of learning who gives enthusiasm and motivation to students is also important so that student learning outcomes can be maximized. According to Emda (2018) and Andriani et al. (2018), motivation has an important position in achieving the learning objectives that have been set. The emergence of motivation is not solely from the students themselves but the teacher must involve themselves to motivate student learning.

CONCLUSION

The implementation of online learning assessments is quite smooth with a variety of supporting platforms. The flexibility of place and time is sufficient to give students flexibility in completing assessments and assignments. The assessment method used by teachers in online assessment includes various application platforms including Google Form, Quizizz, Google Classroom. Meanwhile, teacher assessment techniques vary from multiple choice questions, essays, portfolios, simple practicums, structured assignments and product/work creation.

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