

Analysis of Affective Aspects in Samarinda Vocational School Students in Physics Learning During a Pandemic

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Abstract: This study aims to determine the affective assessment of students in learning physics during the pandemic. This affective assessment is carried out by means of self assessment, which is an affective assessment carried out by students towards themselves as seen from the attitudes of students during physics learning. The type of research used is descriptive quantitative research. The data collection instrument used a questionnaire in the form of 20 questions with a Guttman scale distributed via google form. The population in the study were students from one of the Samarinda vocational high school with a total sample of 68 students in class X Heavy Equipment Engineering 1 and 2. The results showed that the affective assessment of students was included in the good category, the indicator received the percentage obtained was 87.50%, responding 82.72 %, value 76.47%, value conceptualization 77.20%, and value characterization 77.20%.

Keywords: Affective; Evaluation; Learning during a pandemic; Self assessment

Introduction

All countries in the world, including Indonesia, are still hit by the Covid-19 pandemic caused by the corona virus. Starting from March 2020, positive confirmed cases of the corona virus in Indonesia are increasing. Covid-19 is an infectious disease. Various efforts have been made by the government to reduce the number of cases of Covid-19 transmission. One of them is the online learning policy for all students (Dwi et al., 2020). The outbreak of the corona virus disease 2019 (Covid-19) that hit 215 countries in the world poses its own challenges for the world of education, especially College. Almost all universities in Indonesia are now conducting learning from home to prevent Covid-19. Activities that are usually carried out outside the home such as work, school and play must now be done indoors during the Covid-19 pandemic. This certainly has an impact on the education system in Indonesia. The existence of Covid-19 does not necessarily turn everything off, but this is a challenge where those who are already creative are required to be innovative. The current challenge is how

to make online learning achieve core competencies, basic competencies, and learning competencies that are not significantly different from face-to-face learning or even better than face-to-face learning (Riska, 2020).

Students are the main factor in education in schools who are required to always be active in receiving and processing the information they receive in learning (Novitasari, 2015). In addition, teachers also have an important role in fostering students to prepare themselves carefully for life in the future society. In preparing students to become superior individuals, of course it does not happen instantly, but there are efforts that need to be made continuously over time.

The extra role of the teacher is needed to manage the classroom and create a learning atmosphere that is conducive (Jiwandono et al., 2017) and as comfortable as possible for learning (Napsawati, 2020). A good learning process will affect students' understanding of the material presented by the teacher. Teachers can create an effective learning atmosphere so that students have the enthusiasm and motivation to be able to involve themselves in every learning activity carried out.

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Furthermore, students must also prepare themselves so that they can receive learning from the teacher so that they can respond well if the teacher asks questions (Aliwanto, 2017). Teachers must take advantage of technologies such as WhatApps, Google Classroom, Google Meet, and Moodle which are then used as virtual classes for students to explore, interact and collaborate between students and students and teachers (Nurfatimah et al., 2020).

The main thing that can be done is to prepare learning methods and assessment methods (Wahyudi et al., 2020). Assessment or assessment is a decision-making activity based on certain criteria and is qualitative in nature to determine something. Affective assessment is addressed to students regarding their behavior in learning (Salsabila et al., 2021). The assessment process is carried out to determine the extent of student development. The affective domain is closely related to one's behavior or the character of one's personality. Each student has a different personality, so the results of the assessment will be different for each student. The results of the assessment, then the teacher can take an appropriate action in dealing with students. The teacher's accuracy in acting on students will directly affect the process of further student development. This is what makes the importance of assessment for teachers in dealing with each student. Therefore, teachers are always required to have mature abilities in understanding each student based on the assessment carried out. Students can also be more responsible for the process and the achievement of learning objectives. Students will assess the mastery of self-competence honestly with self-assessment to determine the achievement of their learning goals and use it as feedback in improving learning (Wijayanti & Mundilarto, 2015).

Online learning is distance learning that is carried out via the internet and other supporting tools such as computers and cell phones (Putria et al., 2020). In online learning, students carry out discussions, study, and work on practice questions online such as learning activities that occur in face-to-face classes (Hamka et al., 2022).

The affective domain consists of receiving, responding, appreciating, organizational and characterizing values, which are 5 levels of the affective domain according to (Masia and Bloom, 1964). The affective domain according to are as follows.

Receive. Learners receive new information and select stimuli. A common example is the presence of students in class and paying attention to the teacher in discussing the material. They have a willingness to pay attention to stimuli such as books, pictures, videos, or other activities. Students have sensitivity to the stimuli given by the teacher. Students also want to accept an

event that occurs around them, for example listening to the teacher or friends carefully. Respond. The second level is related to the student's response after being given a stimulus in the form of certain information.

Valuing. Valuing is related to the ability to assess something and adjust to that assessment into the form of behavior. For example, when students show some kind of gesture of approval or rejection of friends or teachers. Organization or Conceptualization of Values. Organizing is concerned with combining several different values, resolving conflicts between values, and forming a consistent value.

Value Characterization. Students begin to have the ability to live the values of life related to controlling behavior so that it becomes a characteristic of their lifestyle. At this level, student behavior becomes consistent so that it can be predicted as if it is a characteristic or lifestyle. This stage deals with emotional, personal, and social.

Assessment is very important, in addition to measuring the increase in learning outcomes, assessment is also useful for identifying development needs and planning for future learning, students who have perseverance, thoroughness, and are able to provide solutions to problems that are integrated with their behavior are very necessary (Qadar et al., 2015). This study was conducted to provide an overview or description of the affective assessment of students in learning physics during the pandemic. Especially for vocational students in order to prepare a ready-made workforce with good character to support the success of their work.

Method

The type of research used in this research is descriptive research with a quantitative approach. The research instrument used a non-test instrument in the form of a questionnaire consisting of 20 statements related to student attitudes during physics learning that took place during the pandemic. Respondents in this study were students of class X Heavy Equipment Engineering 1 and 2, totaling 68 students in one of the Samarinda Vocational Schools. The sampling technique used in this study is cluster random sampling, namely the sampling technique by randomizing the group, not the individual subject. Questionnaires or questionnaires created in Google forms and filled out by the students themselves. The measurement scale used in this study is the Guttman scale. The Guttman scale is a measurement scale obtained from interval data or dichotomous ratios (two alternatives) (Sugiyono, 2011). Respondents' answers can be in the form of the highest score of (1) and the lowest score of (0). The method of assigning value weights is for the answer "yes" a score of 1 and for the

answer "no" a score of 0. There are five levels of students' affective assessment scores, namely as follows.

Table 1. Categorization of Affective Assessment Score

Interval	Description
17 - 20	Very good
13 - 16	Good
9 - 12	Enough
5 - 8	Less
1 - 4	Very less

(Riduwan, 2015)

Obtained by using the formula for the length of the class interval is:

$$P = \text{Range} / \text{Number of Intervals} \tag{1}$$

The way to determine the percentage of each category of student affective assessment is as follows.

$$P = f/N \times 100 \% \tag{2}$$

Information:

P : Percentase number

f : The frequency being searched for the percentage

N : Number of frequencies

(Sudjiono, 2012)

How to calculate the percentage of each affective assessment indicator from the questionnaire is as follows.

$$M = X/Y \times 100 \% \tag{3}$$

Information:

M : Percentage of each indicator of affective assessment

X : Actual score of affective assessment indicators

Y : The ideal score of affective assessment indicators

(Sari & Sunarno, 2018)

Result and Discussion

Classification and Percentage of Each Category of Student Affective Assessment

Based on the calculation of scores using the Guttman scale, a maximum score of 20 and a minimum of 0 was obtained. The questionnaire scores distributed to 68 students in one of the Samarinda Vocational Schools can be seen in the following table.

Table 2. Percentage of Student Affective Assessment Score

Interval	Frequency	Percentage	Description
17 - 20	33	48.53%	Very good
13 - 16	24	35.29%	Good
9 - 12	8	11.76%	Enough
5 - 8	3	4.41%	Less
1 - 4	0	0.00%	Very less

The affective assessment scores are categorized into several categories including very good, good, sufficient, less, and very poor. Based on Figure 2, the results of the student affective assessment questionnaire tend to be in the very good category with 33 students as respondents and no respondents in the very poor category.

Percentage of Each Affective Assessment Indicator

Based on the calculation of the score of the questionnaire distributed to 68 students, the actual score obtained from the sum of the scores per student affective assessment indicator. The total score of the overall score per indicator of all students is 272. Based on the data that has been processed, then the actual score of the affective assessment of students is presented in the following diagram:

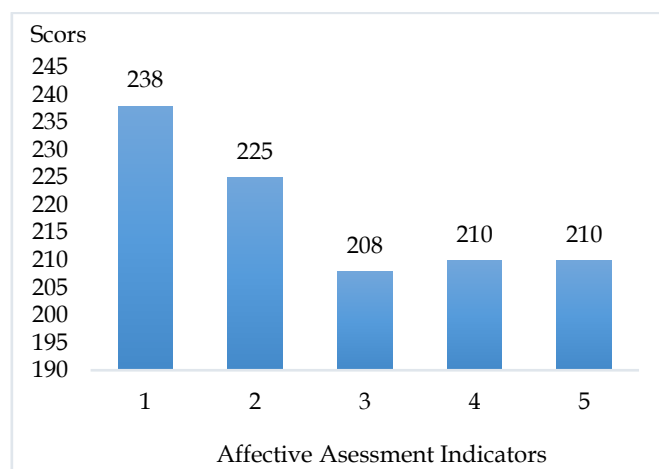


Figure 1. Diagram of Student Affective Assessment Actual Score

Based on Figure 1, the acceptance indicator gets the highest score with a score of 238 and the lowest value is found in the appreciating indicator with a score of 208. The results of calculating the percentage score for each affective assessment indicator can be seen in Figure 2.

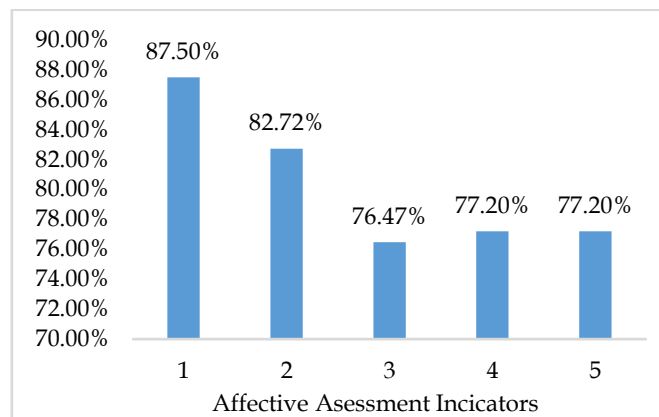


Figure 2. Percentage Diagram of Each Category of Student Affective Assessment

Based on Figure 2, the results of the questionnaire analysis on each indicator of students' affective assessment in learning physics during the pandemic are in the good category. The receiving indicator gets the highest percentage with 87.50% and the lowest percentage at 76.47% on the appreciating indicator.

Affective assessment is an assessment carried out to measure the level of attainment of student attitude competencies which includes the realms of receiving, responding, assessing, organizing and characterizing (Yunita et al., 2017). This research was conducted using a closed questionnaire of 20 statements as a tool to assess students' affectiveness which was distributed via google form. In this affective assessment process, the researcher chose to use self-assessment or self-assessment. This affective assessment is carried out by self-assessment, which is an attitude assessment carried out by students towards themselves in terms of students' attitudes during physics learning. In carrying out affective assessments during this online pandemic, self-assessment is the easiest assessment to carry out. Students are given the responsibility in assessing themselves related to the attitude they do during physics learning takes place. It is hoped that with self-assessment students will realize their strengths and weaknesses in learning whether they are in accordance with the objectives of learning physics. The application of self-assessment to students is carried out with the aim of providing feedback to students so that students can improve their attitudes and ways of learning (Ardiana & Sudarman, 2015). tudents can also train and get used to being honest and objective with themselves. In addition, self-assessment can also make it easier for teachers to assess the affective domain of students because teachers can find out the abilities and weaknesses of students in learning (Kunandar, 2014).

Respondents in this study were class X as many as 2 classes with a total of 68 students consisting of 63 boys and 3 girls. The process of implementing the student affective assessment at one of the Samarinda Vocational Schools is assisted by a physics subject teacher. Before distributing the questionnaire, the researcher was assisted by the teacher explaining that students' honesty in filling out the questions was the main point and the results of the questionnaire would not affect their scores. The teacher emphasized that the questionnaire in this assessment had no effect on their scores so that students were asked to answer honestly about how students actually behaved during physics learning during this pandemic. In addition, the researchers also included the procedures for filling out the questionnaire on the Google Form page which students would fill out. Furthermore, the researcher was assisted by a physics teacher by distributing the address of the google form containing the questionnaire through the WhatsApp

group. The researcher gave several weeks for students to fill out the questionnaire. After students fill out the questionnaire, the google form automatically presents the data entered by students in detail. Researchers can then immediately process the existing data to be presented in descriptive form.

Based on the results of the affective assessment analysis, students obtained a percentage score of 87.50% on the first indicator. This shows that most students are ready to receive learning well, namely by being present on time, paying attention, listening, and seeing the teacher when discussing learning material. The second indicator, students get a percentage score of 82.72%. This shows that most students are involved in discussing learning materials, answering questions from teachers about learning materials, asking if there is something that is not understood, and actively participating in learning physics. The third indicator is respect, in this indicator a percentage score of 76.47% is obtained. This shows that students can determine answer choices in discussions or learning, provide opinions and explanations in discussions, and show a confident attitude towards choices made during learning. Students are confident in their ability to do assignments and submit them on time. Furthermore, the fourth indicator, namely the conceptualization of values, obtained a percentage score of 77.20%. This shows that students can arrange which answer is the most correct in learning, combine and compare more than one opinion in a discussion, and complete an incomplete opinion in a discussion. The fifth indicator, namely the characterization of values, obtained a percentage score of 77.20%. This shows that most students can change or improve if there are differences in the learning discussion, express and present new ideas in the discussion, and use the tools provided in the learning discussion.

This study uses indicators that are arranged based on affective assessment levels consisting of 5 levels, namely receiving, responding, appreciating, value conceptualization, value characterization. Based on Figure 2, the results of the percentage score for the indicator of acceptance is 87.50%, responding is 82.72%, appreciating is 76.47%, conceptualizing value is 77.20%, and characterizing value is 77.20%. The percentage of each indicator is included in the very good category seen from the average affective assessment score of 80.22%. The indicator that gets the highest percentage is indicator 1 and the indicator that gets the lowest value is the indicator of appreciation. That is, the most students master the ability on the indicator of receiving. While the indicator of respect is the least dominant indicator controlled by students. Results of this study were strengthened by Shiddiqi (2014) who measured students' affective learning outcomes. These results are

in the very good category with an average affective assessment of 81.5%.

According to Kratwohl, 5 affective levels can occur if students perform or master the ability on the first indicator before being able to perform the ability on the second indicator and so on. However, based on Figure 2, the fifth and sixth indicators have increased mastery of abilities. The indicator of value conceptualization and value characterization has a percentage of 77.20%. This percentage is slightly higher than the indicator below, namely the indicator appreciates with a percentage of 76.47%. Ideally, the appreciative indicator has a larger percentage than the value conceptualization and value characterization indicator, so teachers need to make improvements in learning to improve students' abilities in respecting indicators.

The implementation of physics learning during the pandemic at one of the Samarinda Vocational Schools is carried out with the hope of increasing students' mastery of the knowledge they learn to become more meaningful and form a new personality which can then be applied in everyday life. Physics learning is carried out through google classroom and WhatsApp group by considering its easy operation and can be accessed easily by students. The teacher starts the lesson by greeting the students along with the introductory material and videos through Google Classroom. Then the teacher began to explain the learning material. The lesson lasts for approximately 1 and a half hours. Next, the teacher displays practice questions to be discussed together, then gives assignments. Assignments are done manually by writing in books and collected in the form of photos sent via WhatsApp groups with a deadline of 1 week.

Some of the obstacles experienced during learning physics during this pandemic are students do not understand the learning material, teachers cannot monitor student conditions directly, lack of enthusiasm for learning compared to face-to-face learning, and poor internet connections in some areas where students live. However, physics learning can still be implemented effectively. If students still do not understand the learning material, students will ask the teacher and other alternatives, namely students have discussions with friends outside of class hours, look for more detailed references on google or youtube. As for some of the obstacles felt by researchers, namely some students delay filling out affective assessment questionnaires and students have difficulty dividing time to do one task with another, so they need to be reminded several times.

Conclusion

Based on the data analysis that has been done, it can be concluded that the affective assessment of students in

the very good category gets a percentage of 48.53% (33 students), in the good category it gets 35.29% (24 students), the moderate category gets 11.76% (8 students), the poor category got 4.41% (3 students), and there were no students who had a very poor category. The percentage obtained from the affective assessment of Samarinda Vocational High School students in learning physics during this pandemic is in the very good category seen from the very good category 48.53% and good 35.29% which dominates. The affective assessment of students obtained a percentage for the indicator of receiving at 87.50%, responding to 82.72%, appreciating 76.47%, conceptualizing value at 77.20%, and characterizing value at 77.20%. There is a leap in mastery of the indicators of value conceptualization and value characterization.

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