

Self-Assessment Through Diary Book for Elementary Students

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Abstract

This study is aimed to find out about the ability of students' self-assessment, especially towards learning mathematics through the use of diary books. This type of research uses quantitative descriptive research. This study uses instruments in the form of diary books, questionnaires, and interview guidelines. The results showed that the use of diary writing techniques as an alternative attitude assessment can be said to be quite effective. Aspects of self-assessment obtained are the ability of students to assess the tendency towards mathematics, the ability of students to assess self-mastery of the material, assessment of the implementation of learning, student attitudes, and assessment of other friends.

Keywords: self assessment, mathematics, diary book, elementary school

1. Introduction

Education is not only about knowledge, but also about the formation of character or attitude of students [1]. This is in line with the opinion [2] where education is not just a means of transfer of knowledge, but as a means of developing values. Similar to Bloom Taxonomy that divides educational objectives into three domains: cognitive, affective and psychomotor [3]. This shows that the focus of learning must also emphasize these three aspects.

Assessment has a big role in determining the success of an education [4]. Good assessment has an impact on the learning process [5]. Assessment is also used to determine strengths and weaknesses in the learning process, so that it can be used as a basis for decision making, and improvement of the learning process that

has been done [6]. In other words, the assessment can be a reference material for further policy formulation.

Implementation of assessment in curriculum 2013 was carried out holistically. This assessment includes aspects of attitudes, knowledge and skills for each level of education, both during the learning process (assessment process) and after learning (assessment of learning outcomes). This is in line with [4][5] which states that the implementation of the assessment in the Curriculum 2013 clearly requests that teachers in schools conduct a balanced assessment on these three domains.

At the level of basic education, the proportion of character development takes precedence over the proportion of academic coaching [7]. This is because the development of character values must begin early. This character value can be said to be the main

achievements in the assessment of attitudes both social and spiritual. Therefore, the right attitude assessment technique is very important

The technique of assessing the domain of knowledge and skills is relatively not a significant obstacle. However, in contrast to attitude assessment, where the assessment is the majority complained by the teacher because it is considered difficult [4]. This is in line with research [8] which states that one of the biggest obstacles in assessment is attitude assessment. Teacher insights in choosing the right method and developing the assessment instruments are still lacking.

The attitude assessment process is mostly done in the learning process in the classroom. Time management is the most crucial thing that determines the implementation of the attitude assessment process [4]. Several techniques have been offered to assess this object. The assessment techniques include observation, self-assessment and peer assessment. The teachers were directed to select at least one of the techniques in performing their assessment [8].

Teachers usually have difficulty conducting attitude assessments with various assessment techniques in a limited time [9]. One of the assessment techniques chosen by the teacher is observation technique [8]. Observation is used for assessment of attitudes in learning and presentation of tasks [10]. However, most of the teachers showed that time management in dividing the roles of teaching and assessing was not yet ideal. During the learning process teachers are often very focused on teaching so that the attitude assessment process is not carried out properly. Such conditions make objectivity of the assessment disturbed. There are students who are well watched, there are also students who are not observed.

Another problem arises when teachers have to teach new students. Teachers are not familiar with either the students so that teachers difficult to observe the students' attitude. Another complaint is about the concentration of teachers in teaching. Many teachers feel distracted when teaching and are interrupted by the assessment process. The teacher said that the assessment process that had been carried out more or less degraded the quality of teachers in their teaching roles [4].

Self-assessment techniques can be an alternative solution. Self-assessment gives more opportunities to students to reflect on their own learning and progress [11]. There are two main activities in self-assessment [12]. First, self-monitor students and evaluate the quality of their thinking and behaviour when learning.

Second, they can identify strategies that improve their understanding and skills. In this case, self-assessment gives students the opportunity to express their weaknesses and strengths in achieving competence in the cognitive, affective, and psychomotor domains.

Self-assessment can be done anytime and anywhere. During this time, the self-assessment instrument used was a questionnaire. However, this instrument has a weakness where students only respond based on the questions given. In fact, there are many things that might not have been revealed by just a questionnaire. Could be, there are problems that have not been observed. In fact, the problem can actually be used as a reference for teachers to help improve learning strategies. Furthermore, when students are given the opportunities to self-assess, they take an active role in the entire writing process which includes writing, evaluating, revising, rewriting and evaluating by making use of the checklist provided [13].

One way for students to freely express their feelings is by writing a diary. Previous research shows that reflective diaries increase student interest towards lessons [14]. Writing diaries enable students to self-assess and develop their writing skills in addition to the benefits for teachers who have the opportunity to monitor student development. By expressing their feelings, thoughts, and impressions may affect students' achievement positively. Students might give responses that teachers might not get from other assessment instruments. For example, problems experienced by students, difficulties when studying material, or attitudes that teachers dislike by students, and others. Reflective diaries provide feedback in regards to the impact of teaching activities provided by teachers.

Based on the regulation of the minister of national education number 22 of 2006, learning mathematics at the level of primary school education puts emphasis on reasoning, attitude formation, problem solving skills, communicating ideas and skills in applying mathematics. Because of the many learning objectives that must be achieved by students at the elementary school level, an effort should be made early so that students are interested in mathematics and are interested in learning mathematics so that students do not experience difficulties in learning mathematics, which will have implications for optimal learning outcomes in mathematics.

As a subject that requires students to understand concepts and solve mathematical problems that tend to use formulas, mathematics is still often considered

students to be difficult subjects and it is not uncommon for students to be uninterested in learning mathematics in class and even avoid these subjects. When given homework sometimes students choose not to do. Things like this that cause elementary school student mathematics learning outcomes are still relatively low. In a number of Yogyakarta Municipality elementary school it was identified that most students still had low interest in learning in learning mathematics.

Assessment of mathematics learning outcomes so far is still focused on cognitive aspects. While the affective aspects and the things that cause mathematics learning difficulties have not been much assessed. Writing this diary book is appropriate to reveal these things. Based on this, further analysis needs to be done on the ability of self-assessment of students through a diary book on the implementation of mathematics learning in class, the ability to master the material, student attitudes and peer assessment. In addition, we need to know what are the things that cause difficulties in learning mathematics.

2. Methods

This research type using quantitative descriptive research. The purpose of selecting this type of research is to find out in more detail about students' self-assessment abilities, especially their interest in mathematics through the use of diary books.

The subject of this study are students at Ngebel Gede I Elementary School Yogyakarta in the academic year 2019/2020. This study uses instruments in the form of diary books, questionnaires, and interview guidelines. Data analysis is carried out through the stages of data reduction, data presentation, drawing conclusions and verification, as well as checking the validity of the data.

3. Result and Discussion

Data description in this study includes data on the ability of students' self-assessment, especially towards learning mathematics through writing diary books. If the questionnaire, assessment is limited in time and context, the diary provides broader information that teachers cannot find through direct observation. This research was conducted on 4th grade elementary school students at SD Ngebel Gede I. Students were asked to write down the learning activities they carried out in class and write down what they felt about the lessons they had

passed either during thematic subjects or mathematics subjects .

Qualitative data in this study are in the form of descriptions of students' self-assessments in the form of student diaries. The contents of the student diary will later describe how students' self-assessments of the mathematics learning process, the ability to master the material, and attitudes that arise from students. In addition, data regarding peer ratings were also found in this study. Trends in writing diary books obtained data such as the following Table 1.

Table I. Trend of Writing Diary Books

<i>Writing Criteria</i>	<i>Students</i>	<i>Percentage</i>
Routine and detailed	9	45%
routine but not detailed	8	40%
Not routine and not detailed	3	15%

Based on Table. 1, 45% of students can write in a diary book well and in detail. 40% of students write that the diary is good but not detailed. While 15% of the total number of students write in their diaries in a proper way and not every day. Thus, at least 85% of students are able to write their learning experiences through diary books. This is sufficient as a source for researchers to obtain information on students' self-assessment abilities. The aspects of self-assessment that will be discussed are the ability of students to assess their preference for mathematics, the ability of students to assess self-mastery of the material, assessment of the implementation of learning, student attitudes, and assessment of other friends. The following is further explanation about this.

3.1. Tendency Towards Mathematics

The tendency towards certain subjects also appears in the discussion of students. Only 5 out of 20 students (25%) like mathematics. While other students tend to like thematic material and English. Mathematics is also the most disliked subject compared to other subjects. There are 55% of students who don't like math. While other students claimed not to like Javanese language lessons. Only one student who sports. Complete data on this explanation can be seen in Table 2.

Table 2. Table Tendence Against Lessons

Subject	Criteria			
	<i>Most Liked</i>		<i>Most dislike</i>	
	<i>the number of students</i>	%	<i>the number of students</i>	%
Math	5	25	11	55
Tematik	13	65	0	0
English	2	10	0	0
Javanese language	0	0	8	40
Sport	0	0	1	5

From the analysis, there are several reasons why students do not like math. One of them is because mathematics is difficult to understand. In terms of problem solving, some students admitted that it was difficult to understand the purpose of the problem and did not know what strategies to use in their solution. The given question exercises are more difficult than the sample questions that the teacher has explained. This means students do not understand the concepts in the material. If students have understood the concept of the material, even though the questions are changed with more complex levels, they will still be able to solve the problems. In addition, students also claim to have difficulty when counting, especially if the numbers presented are numbers with large values.

3.2. Learning Process

Students' perceptions about the implementation of learning are also important things to analyze. Almost all students are able to write their opinions about the implementation of mathematics learning in class. There are 14 of 20 students (70%) able to tell the course of learning activities in class. For example the teacher asks them to discuss the assignments. Students also express happiness when the teacher gives some kind of play in class. Students feel enthusiastic and happy to follow the learning to completion. In linewith [15] students were happy when learning was done with various learning approaches. It means that the use of game strategies is effective for students.

The use of media is also important. For example, students claim to be happy when the teacher brings the media to teach subject matter at factors and multiples. In addition to students interested in the game, students also more easily understand the concepts of multiples and factors. Even so, there are some students who have

difficulty when finding numbers that are of great value. This means that the media of dakon is indeed effective for the introduction of the concept of factors and multiples, but has not been able to cover a larger number. This means that teachers need to make other strategies so that students find it easy to solve problems with numbers that are of great value.

3.3. Student Ability

Not all students dare to express their ignorance of the material in front of the class. Some students only silence when they don't understand the material explained by the teacher. Especially if the teacher does not have time to confirm student understanding after the material is delivered. This will certainly result in low student learning outcomes if allowed to drag on.

There are 50% of students who are able to retell the material they have learned each day. They write down important points taught by the teacher. They are also able to write explanations of the material and describe the benefits of studying the material. This means that they follow the lesson well. Students are able to reflect on the subjects that have been given into written form. The ability to master the material was confirmed when they wrote down the acquisition of good grades.

Many students write down difficulties in learning mathematical material. For example in the FPB and KPK material, students have difficulty understanding their understanding, the differences between the two, as well as solving the problem. Thus, the teacher obtains objective input about the students' absorption of the material presented.

3.4. Student Attitudes

self assessment through this diary book is expected to assist teachers in providing assessment and knowing the character of their students. This is because in fact a teacher not only provides material to students but also educates students to be better. Usually, teachers find it difficult to observe aspects of attitude that are judged simultaneously with the implementation of learning. The use of this diary book provides a solution to find out students' attitudes, even things that cannot be found by the teacher when in class.

There are 17 out of 20 students (85%) able to write down the attitude they have. Most are not written directly, but through a story or incident at school or outside school. Students also do not hesitate to write how they feel. They look enthusiastic writing about the

events they experienced. In addition, students can also easily pour it because the story is very real for them.

As examples of an attitude that can be obtained from a variety of students' writing is honest, cooperation, self-contained, keeping the environment clean, sporty, studious, helpful, obey school rules, discipline, respect for teachers and parents, diligent worship, culture of saving, generous, and courage to ask. Honest attitude for example when taking daily tests, students work on problems with their own abilities. The student did not cheat or copy answers from other friends. An attitude of willingness to cooperate is usually demonstrated when students are asked to complete assignments in groups. This is sometimes still out of reach of the teacher. Some students have been able to write their forms of collaboration together with other friends while doing assignments, as well as in the form of other activities both inside and outside the classroom. For example during picket activities, community service, or group study together at home.

Poor relations between students can affect their learning motivation in class. This will certainly not have a good effect on student learning outcomes. Sometimes the teacher is not aware of a bad situation between students. Likewise in this case, there was a student who stated that he had a bad relationship with his friends. He felt sad because other friends did not want to play with him. This indirectly impacts on student psychology. If this is ignored, it will certainly have a negative impact on learning outcomes. Examples of these cases can be one input for class teachers to develop strategies in responding to what happens between students.

3.5. Peer Assessments

Students at the time of writing a diary sometimes not only write events that are experienced about the students themselves, but also tell the attitude of other friends they see. This means, writing this diary book can also be a means to judge other friends. The form of assessment written by students is usually in the form of events that they see towards their friends, or their feelings in the form of likes or dislikes towards the attitude shown by their friends. There are 9 students (45%) who are able to show an assessment of the attitude of other friends.

One example of an assessment form of AF students is there are friends who do not comply with school rules. AF writes the form of violations committed by students during the ceremony. AF is also able to say that breaking the rules is a bad deed. This means, AF has

understood the value of obeying the rules and reflecting on oneself not to do the same thing.

Forms of positive attitudes from peer ratings that emerge are helpful, willing to share, studious, sportsmanlike, diligent in worship, friendly, and smart. While negative forms of student assessment are crowded attitudes during lessons, cheating attitudes during tests, are rude, and like to hit other friends. Related to mathematics learning, there are students who are lazy to work on math problems either independently or in groups. The student reasoned that his friend did not understand the material presented by the teacher so he did not want to take part in working on math problems.

The strengths in the self-assessment strategy through writing this diary book are that the teacher is able to recognize the strengths and weaknesses of students without having to be afraid of limited time. This is because students can write a diary book anytime and anywhere. Moreover, students can freely express what they feel and tell the events experienced without fear of being read by other friends. Some students assume there is privacy when writing in a diary book. This makes the information conveyed can represent actual facts. Thus, the information provided can be a source of information for assessing students' affective aspects. In addition, this strategy can be a reference source for the basis for the evaluation of subsequent learning.

Weaknesses in the self-assessment strategy through this diary book is that there is a possibility that the teacher does not get complete information, especially if students are not cooperative in writing their experiences in the diary book. In this case, there are students who do not like to write so it is difficult for teachers to find information about students' affective aspects. Unless there are other students who provide peer-to-peer assessments of these students.

4. Conclusion

Based on the analysis results, it was concluded that the use of diary writing techniques as an alternative to attitude assessment can be said to be quite effective. This technique can overcome teacher complaints related to less optimal assessment where one of them is limited time when assessing attitudes and lack of teacher knowledge in formulating instruments [16] [7] [4] [10] [Subagia, 2019] [8]. In addition, the scope of attitudes gained is broader. This is because students are free to write down what they feel both during learning in class and afterwards. Sometimes even can provide

information that can not be found by the teacher only through observation techniques in the classroom. This is in accordance with one of the good assessment criteria, namely it must be able to provide clarity about what is and what is not covered [17].

A lot of important information can be used by teachers to determine the strengths and weaknesses of students in achieving learning outcomes in all aspects. This is because self-assessment is an innovation which, if suitably designed, can fit any context [17]. Through diary writing, it appears that students are able to write down various things that they experience and feel completely during mathematics learning. Starting from the likes or dislikes of mathematics and their reasons. Students are also able to rewrite the mathematical material they have learned. They are also able to write which parts of the material are not understood so that it can be a material for teacher evaluation to provide enrichment or also for the selection of further teaching strategies. In addition, the teacher can also know that the use of mathematical media and game strategies in the introduction of material get a positive response from students. Students also provide information that they have a positive attitude during math, for example working math problems in earnest, asking friends if they do not understand the material. That way, the teacher can confirm students' attitudes towards mathematics by achieving mathematics learning outcomes.

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