How should the teacher provide feedback and its follow-up in assessing mathematics learning?

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Abstract. Assessment is one of the important things that can affect the learning process and results. During the assessment phase, teachers are required to be able to provide effective feedback and its follow-up in order to get student learning goal. This study aims to present the facts that related to how forms of feedback and follow-up carried out by mathematics teachers in a one of public high school in Cimahi, West Java. Qualitative descriptive research method is equipped with observation, interview and questionnaire used to collect the research data. Through the data collection technique, it was found that the feedback that teacher presented from the entire learning process and the assessment process was still very insufficient. Students only get information about the scores obtained from the assessment in the form of a written test. There is no descriptive feedback and appropriate follow-up that makes students still feel difficulties in implementing mathematics learning. At the end of this article, it is also presented a recommendation for providing effective feedback based on theoretical studies of the results on previous studies.

1. Introduction

Assessment is teachers’ strategy to know how teachers teach and how students learn then it will help teachers to effective teaching and learning process [1, 2]. Moreover, the assessment is used for other purposes, such as presenting student score, national accountability, monitoring systems, allocating resources in an area, improving the quality of learning and teaching and providing feedback to students and parents or guardianship [3]. Thus, the assessment was assumed to be an integrated part of learning and can be able to enhance and empower learning that have been done by students and teachers.

There are three types of assessments that are classified based on the objectives of its implementation, such as assessment for learning, assessment as learning, and assessment of learning. According to Earl, assessment for learning is to provide information to the teachers to upgrade their learning activities, modify and understand about approach learning of students. Assessment for learning occurs during learning process. The findings of the assessment for learning in the form of information about what students knew and can do, what students doubt, or what disadvantages that students have in learning, so teacher can following up their students.

The practice of assessments has many principles to achieve objectives. One of these principles is the assessment have to reflective, produce clear reports and have practical value to many parties [4, 5]. Specifically, in mathematics assessment, the National Council of Teachers of Mathematics (NCTM) formulates six standards for assessment, such as: (1) the assessment must reflect which mathematics is needed by students and which mathematics is mastered by
students; (2) assessment should improve the quality of mathematics learning; (3) assessment should encourage justice; (4) the assessment should have open process; (5) assessment should encourage valid conclusions regarding mathematics learning; (6) assessment should be a coherent process [6]. In essence, assessment is a process that occurs continuously and continuously in the learning process including mathematics learning.

The developed point of view is the assessment should present many opportunities for students to show the way of learning, also make reinforcement using formative feedback on a regular basis [7]. Successful feedback such as: (1) give students confidence; (2) motivate students to develop their learning; (3) presents information on improving student performance; (4) provide opportunities for students to overcome and correct their mistakes; and (5) students can identify their strengths and weaknesses in learning [8]. Effective use of feedback will give students the opportunity to realize where they are and indicate what they can develop.

If we talked about assessment for learning, and the principles of implementing assessment in learning assessment will deliver important points regarding the existence of feedback and follow-up in order to encourage the development of student learning outcomes. The feedback is defined as a core and essential teaching activities undertaken to assist learning and provide information to students to enable them to identify the knowledge, skills and competencies of what can and should they have shown, and to identify the direction and the path to improvement. Feedback can occur before, during and / or after learning activities. Feedback is vital link between teacher assessment of student learning processes and actions together with the assessment results [4].

Therefore, this study aims to know the way of feedback given by the teacher on the work of students and how the form of effort made by teachers in responding to the assessment results by their students. The findings of this study are expected to have positive impacts on the implementation of mathematics assessment.

2. Method
The data presented in this article conducted by descriptive qualitative methods. Data collection conducted through observation of learning process and assessment process in a class of a senior high school in Cimahi, West Java. Furthermore, these findings observation are complemented with the interviews to the students and teachers, also filling out a questionnaire through Google forms conducted by students.

3. Result and Discussion
In this study, a mathematics teacher who teaches at high school become subject of this research. After that, the researcher observed the learning process in class by the teacher, also observe the process of implementing assessment for learning, and the efforts made by the teacher in feedback and follow-up the student assessment. Based on the observations during the learning process, facts were conducted about the assessment efforts made by the teacher in the classroom, such as: (i) giving students some practice questions related to the material on a day; (ii) Give students chance to answering questions on the board.

Some students were given the opportunity to do the work by writing their answers to the practice questions the teacher gave on the board. At the bottom or side of the answers they present, students write their respective names. Then, the teacher sees the accuracy of the answers given by students. Discussion of the answers written by students is not done in depth, in this case the teacher only sees the accuracy of answers in the form of numbers obtained based on calculations. The teacher stated the correct answer without any deep correction on the way students in answering on written form. The teacher also unable to detect the level of understanding of other students who do not have the chance to perform on the board.

Furthermore, the form of feedback given by the teacher from the results of students' written assignments can be seen in Figure 1 below.
Figure 1. Example of assessment of students' written assignments

Based on Figure 1, it can be seen that the feedback is only by scores, there is no clear evaluation criteria known by students and the assessment is not accompanied by descriptive feedback so that students know which mistakes they have. According to Gibbs [8], there are two types of feedback such as evaluative feedback and descriptive feedback. Evaluative feedback is in the answers of true or false. Meanwhile, the descriptive feedback can be in the form of: (i) a description of why an answer is considered appropriate; (ii) a description of what students understood; (iii) advice on doing things; or (iv) ask to suggest ways of student learning to improve their skill. The descriptive feedback is the key to the success of the assessment. Students learn from assessment when the teacher presents specific and detailed feedback, and direction for each student to demand their learning.

The researcher had interview with teacher to get further explanation on how the teacher attempts to present the feedback from the students and what kind of follow up from the teacher based on the learning outcomes. Brookhart [9] states that feedback is effective if it is implemented with the correct strategy and has the correct content. Feedback strategies is various and depend on: (1) time; (2) amount; (3) method of delivery; (4) listener. On the other hand, Wiggins [10] states that the feedback has objectives that referenced, real and transparent, actionable, easy to use, on time, continuous and consistent. Thus, in this interview session the researcher gave questions related to components of effective feedback based on Brookhart and Wiggins’ point of views.

Based on the findings, it was conclude that more than 70% of students in this class had not pass 68 as the Minimum Mastery Criteria (KKM). Moreover, the researcher gave questions related to the way of teacher gave feedback and did not continue what the teacher did on student learning outcomes.
**Researcher**: Do you always return the students’ worksheet after an assessment?

**Teacher**: No, sometimes I do not return the students’ worksheet because I don’t have the time to check everything by myself.

**Researcher**: And then, have you ever given completed assessment with details of student mistakes?

**Teacher**: No.

**Researcher**: Regarding student learning outcomes which can be considered unsatisfactory, what effort to improve student learning outcomes?

**Teacher**: I have changed the learning strategy once during the last semester.

**Researcher**: Did you ever notice the attitudes of students in react the value that he received? Do you know that students will be motivated or not?

**Teacher**: I did not concern about this, I did not know whether the results of the assessment that I gave could motivate students or not.

Some things that can be conducted from the facts about the assessment process by the teacher such as: (i) the absence of transparent assessment system makes students do not know criteria of assessment used by their teachers (ii) the findings of this assessment are not continuously given by the teacher to students; (iii) the findings of assessment is score only; (iv) the form of follow-up to the assessment results is low; (iv) the teacher does not realize that assessment should not only provide grades but also can improve their students learning.

In the next stage, researchers conducted interviews with students and conducted questionnaires by Google forms. Hattie and Timperley [11] state that effective feedback is the answer from the following three questions: Where am I going?; How am I going?; Where to next? Each question will work on four different levels, namely: task level, process level, self-regulation level, self-level. So, at the interview stage and the Google form, the researcher focused on matters related to students opinion towards the assessment, and how students’ attitudes in responding to findings of assessment.

Based on the results of interviews with students, it is known that students actually still have a lot of problems in learning mathematics. This is certainly in accordance with the fact that they are hard to pass the minimum score (KKM). The reason is the difficulty to understand abstract mathematical concepts. However, students admit that they do not dare to express this difficulty to the teacher. Moreover, some students try to ask friends who understand better. In addition, researchers also found the fact that the emphasis on learning objectives at each meeting has not been realized by students. There should be transparency between teachers and students regarding what targets they will achieve together through learning. However, the implementation of learning that is not linear with the steps in the government guidance makes teachers skip the presentation of learning objectives to students. Less awareness of the learning objectives in the end makes students do not really understand about the aim or achieved during learning process.

By questionnaire, there were some interesting things expressed by students about their views on the assessment which was only in the form of scores. Figure 2 below shows the results of a questionnaire filled out by one of the students.
Students thought that the assessment of teacher is not fair, because it could be a friend who gets good score because he cheated. Another point of concern is a researcher on the impact assessment of the student's motivation to improve ways of learning. The questionnaire results showed that although students get low marks in daily tests, this is the level of motivation for them to make preparations to learn new material.

In Figure 3, it can be seen that 57.9% students are not motivated to make preparations for the next learning, and also 15.8% of students have less understanding. Therefore, giving minimal feedback done by the teacher has an impact on students' motivation to learn better. In this case, if it is discussed with the opinion of Hattie and Timperley students have not answers to the questions Where am I going?; How am I going?; Where to next?.

4. Conclusion
The feedback in learning process is part of teaching, a part that comes after the initial learning. Based on findings, it was found that the teacher effort in presenting feedback on student learning outcomes were still not effective. The form of feedback in scores is not understood for students. The feedback should have the answer of these questions: Where am I going?; How am I going?; and Where to
As result, the students and teachers can improve the quality of teaching and learning process. Moreover, the researcher suggests that the teacher concern to feedback form to obtain powerful impact based on the assessment findings. The feedback should be given based on: (i) time; (ii) method of delivery; (iii) listeners; (iv) transparency.

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