Peer assessment based on conservation in the practice of teaching mathematics in the program of the teaching profession

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Abstract. This study aims to criticize micro teaching assessments that have been going on so far which feel slow, monotonous, using a lot of paper with various formats, not involving students who do not practice as teachers and waste time. Innovations offered are peer to peer assessment without using paper, based on conservation. The practice of teaching is very important in order to produce a professional Mathematics teacher. Assessment of micro teaching requires precision and thoroughness, for that required student participation in the assessment. Peer-to-peer assessment is attempted without paper, according to facts, and gives thoughtful advice to the characters.

1. Introduction
The Teacher Professional Program (PPG) as a result of the enactment of the Teacher and Lecturer Law becomes a vital means in the education of prospective teachers. This program is held for a year which is divided into two semesters. The first semester designs lesson plan in junior and senior high schools as well as vocational high schools for the whole class followed by the practice of teaching with peers. The second semester all PPG participants practiced in schools with actual learning with the student audience. Such arrangements need to be considered for improvement regarding the curriculum, there are still many participants who have not mastered the content thoroughly [1].

According to [2], the implementation of PPG at Makassar State University specifically for Undergraduates Educates in the Outermost, Border and Disadvantaged Areas (SM3T) participants experienced shortages in their management. Based on the results of in-depth investigations and teacher education interviews (PPG) of SM3T program participants who are alumni of the SM3T geography teacher, there are obstacles related to the compilation of 2013 curriculum learning tools studied in the SSP (Special Pedagogy Subject) workshops different from those applied to partner schools. Thus, this difference can affect the assessment of performance tests during practical field experience (PPL) in partner schools.

In its implementation there are various obstacles including discrepancies between workshops carried out in the first semester on campus with the implementation of field experience practices (PPL) in terms of understanding the 2013 curriculum. PPL requires complex competencies in a student's implementation. The main determining factor is mastery of the material and teaching skills in front of the class. Mastery of the material is no doubt, because the PPG participants have indeed passed the undergraduate program and passed the selection.
The second factor, teaching skills obtained from student activities to practice. There is no right way to master a skill except by practicing. Especially to become a Mathematics teacher besides teaching skills such as teachers of other subjects, it is also necessary to practice writing mathematics so that students' understanding becomes precisely unambiguous.

The implementation of Mathematics learning practices in front of peers has been done traditionally, where the instructor invited participants to practice teaching for a certain time, for example 35 minutes, then the teacher commented on a number of things that were felt to be wrong. The rest may ask the opinions of participants to comment on it. This happens monotonically, using various formats of paper and requires a relatively long time. In each teaching practice, prospective teachers observe their peers and fill out peer assessment forms that cover teacher competencies; and assessment is discussed in the theoretical part of teaching practice, this takes two hours.

Innovations offered are peer to peer assessment without using paper, based on conservation. Peer assessment is meaningful in evaluating Mathematics learning practices involving peers. By assessing fellow friends it is hoped that the concerned will understand the error so that it will not be done when the participants take turns in practice.

Learning is acquiring new knowledge or skills and can occur through being taught and learned or by practicing: through experience. Educators play a large role in teaching and encouraging learning habits in students. There are several ways that educators can use and encourage independent learning in students. The method that makes it possible to encourage increased motivation and self-efficacy in the classroom learning environment is self-improvement and peer assessment into the daily structure in the class [3].

In view of this [4] recommends that in teaching Mathematics, Peer Assessment must be introduced into student teaching in school and must be part of the Mathematics teaching curriculum. This is due to this technique giving students the opportunity to be creative and assess other friends in terms of their strengths and weaknesses.

Opinion of teacher candidates regarding peer assessment, all prospective teachers, 90.91% stated that the use of peer assessment in teaching practices is beneficial [5]. Prospective teachers think that peer assessment helps develop skills in using standards while making judgments; increase awareness of individual strengths and weaknesses; support learning from peer strengths and weaknesses; increasing responsibility for learning and development that are mutually supportive; improve teacher competency; provide opportunities to make comparisons with other coworkers (diversity of practices); enhance cooperation and interaction; reduce the anxiety that results from being assessed; allows the teacher to focus on teaching; increasing openness to criticism; develop assessment skills; improve emotional skills and critical thinking; bring peer assessment skills and strengthen relationships with coworkers. The findings of this study indicate that peer assessment is an effective method in the configuration of the teaching process. Selfassessment is one tool that helps students know if they are learning [6].

In higher education the assessment is very much considered by students, even though the assignment is left to the lecturer, they no longer know the assessment process. Therefore, opportunities for learning are lost when they become passive recipients of assessment results. Future learning-oriented assessments involve students in the assessment process to improve short-term and long-term outcomes by requiring students to make sophisticated judgments about their own learning, and their peers. Related to this [7] states that peer assessment can be implemented in higher education both in the short and long term especially to educate professional Mathematics teacher candidates.

By conducting peer assessments, students give a positive response in Mathematics lectures, especially in the Mathematics Foundation lectures. Difficulties in giving the necessary emphasis and explanation to these materials, and providing some more practice to strengthen their understanding [8].

Related to conservation-based assessment, in this case minimizing the use of paper in assessing and incorporating elements of character in learning. Traditional analysis of comparative peer-to-peer assessment and the use of technological aids has been carried out by [9]. The results of the survey
using computers, information and communication technology are highly recommended, even using Moodle LMS.

The use of communication tools and other information that can be used is a tablet. According to [10], cellular media tablets are increasingly popular among students, besides communication and consumption of digital media as the main functions, the latest cellular media tablets can also be used for data production and processing in the context of teaching and learning. In terms of peer assessment, tablets have a promising solution in learning Mathematics, especially in conducting peer assessments.

The peer assessment technique for prospective Mathematics teachers will also develop four additional skill categories namely Teamwork and Collaboration; Critical Question; Communication Skills and Learning how to Learn [11]. These four things are the main competencies that are needed in navigating the 21st century. The four competencies if added with digital literacy and improvement in the character of conservation will be the implementation of better and more targeted preparation of professional Mathematics teachers.

2. Methods
This is a descriptive research. It was conducted at Mathematics Department of Universitas Negeri Semarang. The subjects were 20 mathematics students who studied in Program of Teachear Professional of the 2017 academic year.

Data collection methods of this research were observation and questionnaire. Observation was used to obtain data on how was the students’ performa in Mathematics learning practical. There are two questionnaires, namely: (1) Self-assessment questionnaire, (2) Responses questionnaire. The results of responses questionnaire of students were analyzed by calculating percentage of students who gave positive responses, then determined the category of students’ response. The students’ response was said to be positive if at least 70% of the students responded positively to at least 80% aspect in question.

3. Result and Discussion
3.1. First action with more minute
The implementation of the peer assessment for the first time was felt to be somewhat awkward because the students had not been whispered to conduct an assessment of their peers. This condition shows that what is written is good things which are the advantages of participants who practice teaching. Likewise, when giving a verbal comment that looks hesitant to convey things that are not right even not good for the participants assessed.

3.2. Female students were less open to commenting
For female students, revealing the lack of fellow women is something that does not want to be done. This was carried out when becoming an assessor of peer assessment practice teaching Mathematics subjects. They do not want to be open to expressing the reality that is observed and felt, so that it seems to be covered up. Unlike male students who are more open to commenting on fellow male friends in teaching practices.

Seeing these conditions, the instructor gave instructions that what must be commented on and discussed were things that were not yet relevant related to teaching skills, not those that had been well mastered. After that, the female students began to gradually express their opinions about their fellow women friends.

3.3. Paperless (supports conservation)
The cause of the lags in implementation is also if you still use paper in writing comments, you will read again notes that are sometimes unclear or incomplete. For that, in the view of the next participant the observer was asked to use a tool in the form of a computer and even their gadget to record the implementation to be simpler and they were very familiar with it.
Effects without paper use in observing learning practices are very well proven if there are things that need to be documented, just use the facilities in the gadget. For example, there is something that needs to be written or drawn, the judge just needs to take pictures using his gadget camera. Even the excerpts of the learning process that will be commented on can be recorded. The use of technology in peer assessment is very beneficial for all. Thus this process will support the realization of professional teachers.

3.4. Character building honest and responsible (conservation of value)

In line with the opinion of [11] that peer assessment will develop four additional skill categories namely Teamwork and Collaboration; Critical Question; Communication and Learning Skills for Learning, the results of this study focused on observing students' honesty and responsibility. Both of these are honesty and responsibility in the short term will help success in the study and for the long term will shape the character and morals that are good for career development and life in society.

Honesty is observed in terms of making judgments among peers. With a double observer system it will be discovered that there is someone who is not honest about what is observed. The results of the observation will be different from other observers. Although this difference may occur because of misperception not because it is not honest.

Responsibility is observed through the accuracy and completeness of the assessor when conducting peer assessment. Seriousness in carrying out this task on the grounds that each participant will also evaluate the others, he does not want to do work irresponsibly. Thus a positive response will occur between PPG participants who will maintain the character of conservation.

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