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Analysis of the Difficulties in Determining the Right Evaluation Instrument in Teaching Practice Student Teachers of Mathematics Education Study Program

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Abstract

This research aims to analyse the difficulties experienced by mathematics student teachers when conducting teaching practice in schools. Teaching practice is one of the important activities that must be taken by student teachers to obtain a bachelor degree of education. Student teachers' readiness in experiencing this process is also an important concern in universities, so that research in analysing the difficulties experienced by student teachers needed to be held to become the basis of curriculum reference. This research is a qualitative descriptive study that collects data through questionnaires, semi-structured interviews and the assessment of one of the problems experienced by students, namely in determining the appropriate evaluation instruments to manage teaching practice. There were 60% of students who experienced this difficulty, the number of student teachers who experienced this difficulty increased in three different classes of the year that became the sample of this research.

Keywords: teaching practice, evaluation, instrument, difficulties

Introduction

The developments and demands of the present era actually compel the curriculum compiled by universities' institutions and must refer to the needs of the marketplace. The enthusiasm for

organising education that is in accordance with the needs of the marketplace is included in the universities' curriculum in Indonesia, namely the Indonesian National Qualifications Framework (*Kerangka Kualifikasi Nasional Indonesia* or KKNI) based curriculum. Teachers as one of the professions in the field of education are also inseparable from their role in schools and other educational institutions as their marketplace. Along with the development of the times, schools as a marketplace for the teaching profession, require more skills from teachers. Starting from the ability to use information technology in learning activities, the ability to speak English and other foreign languages, as well as any other specific skills.

The Faculty of Teacher Training and Education is a faculty that produces prospective teachers. The quality of its existing learning activities determines how the quality of a prospective teacher is formed; therefore, we need to look at how the activities are carried out in order to improve the quality of graduates. One of the mandatory activities given by the faculty of teacher training and education for its student teachers, is conducting teaching practice activities. Teaching practice is a period where student teachers practice implementing all the competencies they have towards the real conditions of the school. Student teachers are faced with real schools and real students, as if they were real teachers.

According to Astuti et al. (2013), the vision of teaching practice is to prepare professional and reliable teachers; while the mission of teaching practice is to prepare and produce prospective teachers who have the skills, knowledge, high reasoning, attitudes and behavior patterns possessed by an educator. This is so that teaching practice activities cover various forms of practical activities such as making learning plans, carrying out learning activities, administration, guidance and counseling, academic and non-academic activities that occur in the practice sites and evaluating all

these actions. Based on these important objectives, concerns about the difficulties experienced by student teachers while conducting teaching practice needs special attention.

Teaching practice became an interesting and important topic to be studied. Teaching practice has a contribution in determining the quality of graduates produced by an educational institution. Research on teaching practice is often found on overseas universities outside Indonesia but there is still little done in Indonesia; therefore, it is important to map the problems encountered in the implementation of teaching practice in Indonesia. Teaching practice is actually one of the mandatory programs in the form of pre-positions designed to prepare prospective teachers to enter the field of education marketplace. According to (Wilcox-Herzog & McLaren, 2012), for instance, when caregivers attend training workshops in the community or at professional meetings, their global classroom quality increases, they tend to interact more sensitively with the children in their care, and children's scores in a variety of developmental domains improve. According to Heruwono (2013), teaching practice is one of the pre-service positions that is designed to train prospective teachers to master teacher skills that are intact and integrated so that after completing their education they are ready to independently carry out their duties as teachers.

As a comparison, the following are the results of research conducted by several campuses which contain difficulties that occur during the teaching practice period. Research conducted at Copperbelt University, Zambia, conducted by David Chituta, Leonard Nkhata Asian Banda, Jack Jumbe, and Beauty Choobe which stated that the problems encountered by the student teachers were as follows:

- difficulties in presenting mathematical subjects;
- difficulties due to the lack of laboratory equipment;
- failure to adjust their teaching to a low ability class at school.

Furthermore, results from the research conducted by Fadilah (2012), found some difficulties experienced by students included lack of mastery of material, inappropriate selection, lack of student creativity in managing classes, lack of teaching preparation by students, lack of student expertise in using learning media and a lack of communication between student teachers and their tutors at school.

These difficulties can be divided into three main phases or stages, namely, the phase of preparation, implementation and ending in evaluating. From these various difficulties, this study focuses on the evaluation phase of a teaching and learning activity. The results of this study are expected to be a reference for improving the quality of learning and curriculum to fit the needs of educational marketplace, namely schools. So, the questions raised in this study are:

1. Do the student teachers of Mathematics Education Study Program, Faculty of Teacher Training and Education, UKI experience difficulties in determining evaluation instruments when doing teaching practice?
2. What is the cause of the difficulty?

The purpose of this study is to find out what difficulties are experienced by student teachers of the Mathematics Education Study Program when conducting teaching practice and what causes these student teachers to experience difficulties in the process of mathematic learnings at school even though they are equipped with various learning methods.

Methods

This research uses a descriptive form of qualitative reseach method. The purpose of qualitative descriptive research is to reveal facts or, phenomena, a situation that really happened during the research taking place. In addition, it also describes the mismatch between several events,

the relationship between variables that arise, differences between the facts that exist and their influence on a condition, and so on.

The subjects of this study were student teachers who had conducted teaching practice activities, tutors, and teaching practice advisors. This research sampling was carried out by purposive sampling technique, student teachers from the 2012-2014 class of Mathematics Education Study Program, Faculty of Teacher Training and Education, UKI. The student teachers were selected with high, medium and low ability criteria.

The Study Group

This study used questionnaire data from each of the three classes and also used in-depth interviews with eight student teachers in the study group that were reported in Table 1.

Table 1. The characteristics of the students in the study group

Pseudonym	Mathematics Achievement	Gender	Sub Subject
M1	High	Male	Numbers, Algebra, Functions and Relations, and Straight Line Equations
M2	High	Male	Opportunities, Matrices, Logarithms, and Decomposition
F1	High	Female	Functions, Sets, Flat-side Space Geometry, Pythagoras
F2	Medium	Female	Round Numbers, Exponents

F3	Medium	Female	İntegral, Linear Programs, Trigonometry, Statistics, Opportunities
F4	Medium	Female	Linear Programs and Matrices
F5	Low	Female	3x3 Order Matrix and Transformation of Geometry
F6	Low	Female	Linear Programs and Matrices

M: Male; F: Female

In Table 1 is the data of respondents selected to conduct in-depth interviews. The data illustrates their mathematical achievements which are assessed based on the student grade point average, in addition the table also displays the gender and mathematical sub-subject they teach when conducting teaching practice.

a) *Data Collection Tools*

The data in this study were obtained in two ways, namely by interview and questionnaire. Interviews were conducted to dig deeper into what the problems experienced by students in the period of teaching practice and the factors causing the problem.

This form of interview is a semi-structured interview where the questions are more open and answers can be recorded in more detail, and where there is space left for unexpected problems that arise in the conversation (Mayoux, 2010). With the semi-structured interview, it is hoped that it will be able to dig deeper into the difficulties experienced by teaching practice student teachers that escaped the observation of tutors and teaching practice advisors.

To make it easier for researchers to disseminate and recapitulate data, validated questionnaires were made in the online version by using a google form (questionnaire attached). Then the questionnaire link is shared with student teachers class leaders from the class of 2012 to the class of 2014 to be distributed to each of their classmates. The process of filling out the questionnaires took about 5 months. This process is quite long because students for the 2012 and 2013 classes are already graduated and difficult to contact. When the researcher distributed the questionnaire to the class of 2014 student teachers were busy completing their final assignment and graduation preparation period. These also became obstacles for researchers that slow down the data collection process. Some of the problems described above need to be taken seriously for researchers who want to examine similar things. The data obtained is then reduced and encoded to analyse the keywords that are the cause of the difficulties, then conclusions are taken by passing the previous data triangulation process.

Questionnaires are used to find out the difficulties and the causes of students having difficulties when conducting teaching practice. Based on the results of the theoretical study several indicators were observed and determined in this study, namely as follows:

Table 2. The indicators

Dimension I	**Difficulities experienced by student teachers**	
	Indicators	**Total**
Evaluation Phase	Difficulty in making the right evaluation instrument	2
Dimension II	**Cause of difficulties**	

	Indicators	Total
Internal self-factor	Lack of confidence	2
	Inadequate mastery of subjects and methods	2
External Factor	Curriculum that does not support	2
(Study Program/Faculty/UKI)	Superficial discussion of mathematics studies	3
	Total	**11**

In addition to going through questionnaires, the two dimensions are also deepened in the form of interviews to confirm and explore the causes. The interview guidelines used in this study are as follows:

1. What is your basis for saying that you have difficulty making evaluation instruments?
2. What is the cause of this difficulty?

b) Data Analysis

After the questionnaire data was collected, the data obtained from the questionnaire were analysed by descriptive statistics. Analysis of questionnaire data is done by determining the percentage of respondents' answers for each item statement/question in the questionnaire which is then carried out descriptively or by transforming it on a Likert scale. While the data that in the form of transcripts of the interview results will be analysed using coding.

Findings

Compilation of evaluation instruments is carried out to determine the extent of understanding, thinking skills and student learning outcomes. This is in line with the opinion of Malawi and Maruti

(2000: 3), one of the functions of evaluation in the field of education and teaching was to find out how far the results had been achieved in the educational process that had been carried out.

The construction of evaluation instruments needs to consider the aspects to be measured, so that it can produce an appropriate assessment of the achievement of students. In a book titled "Understanding Standards-based Education: A Practical Guide for Teachers and Administrators" Zagranski R., Whigham W. T., & Dardenne P. L., (2007) tells that there are some differences of evaluation instruments in the past compared to the present. In the past, the emphasis was on the following:

- Assessing what was easily measured
- Assessing the knowledge level of Bloom's Taxonomy
- Assessing to find out what students didn't know
- Generally using end-of-unit testing as evidence of a grade

And, in the present, the emphasis was on the following:

- Assessing what skills are highly valued
- Assessing understanding, reasoning, and application
- Assessing to learn what students do know
- Teaching students how to self-assess in order to correctly adjust

The emphasis of the present assessment requires a change in the assessment systems in schools. Teachers are required to make a more creative form of assessment and assess the things that are important to be evaluated as the achievement of learning. In Indonesia, through the application of the Curriculum 2013, there is a nuance of assessment that is in line with the present

assessment, the scoring system discussed in this study is a combination of old and new assessments, namely as follows:

- Assessing what skills are highly valued from the subject
- Assessing the knowledge level of Bloom's Taxonomy
- Assessing to learn what students do know based on knowledge, affective and psychomotor aspect.

Furthermore Zagranski R., Whigham W. T., & Dardenne P. L., (2007. P.44) told: "There are many varieties of formative assessment strategies to make instrument evaluation, observation is one of them". In this way the teacher may focus on the following:

- How the students use resources.
- How they use social interaction skills, and how they process and apply learning.
- How they make necessary connections.
- How they use organisational skills.

Therefore, it is too narrow to assume the evaluation instrument or assessment can only be done at the end of the lesson, assessment can also be done during the learning process. The scope of the assessment is also not only related to the cognitive abilities of students but also the affective and psychomotoric aspects. The Curriculum 2013 has provided space to accommodate all the interests of the assessment.

During the conducting of teaching practice student teachers of the Mathematics Study Program experienced quite serious difficulties in determining the right evaluation instruments. Chart 1 shows the percentage of student teachers who have difficulty in determining the appropriate

evaluation instruments; it is reaching 60% of all study respondents. The questionnaire data is presented as follows:

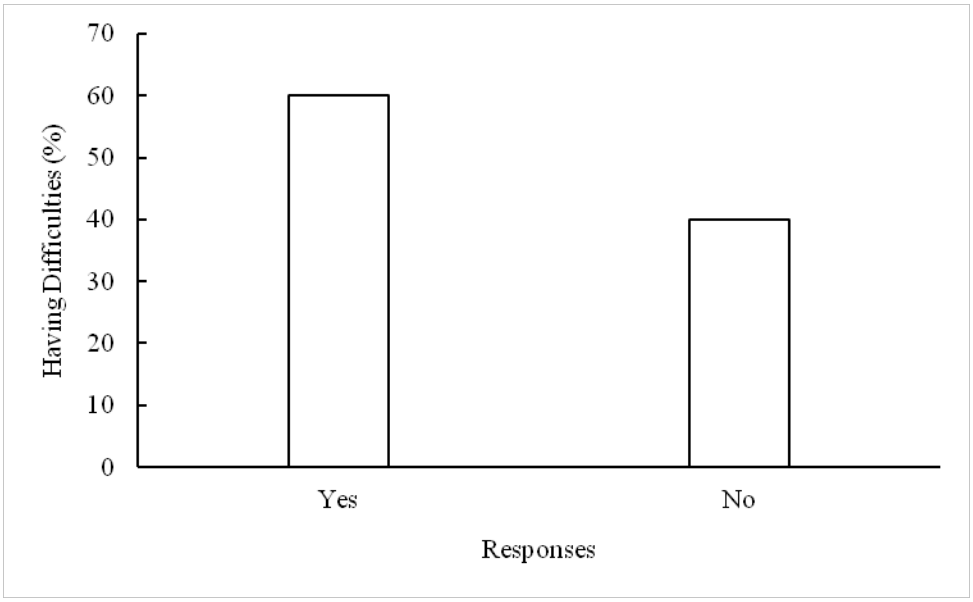

Figure 1. Data of The Difficulties in Making the Right Evaluation Instrumental

By analysing the data per class, it was found that there was an increase in difficulties experienced by student teachers in determining the appropriate evaluation instruments as shown in the following chart:

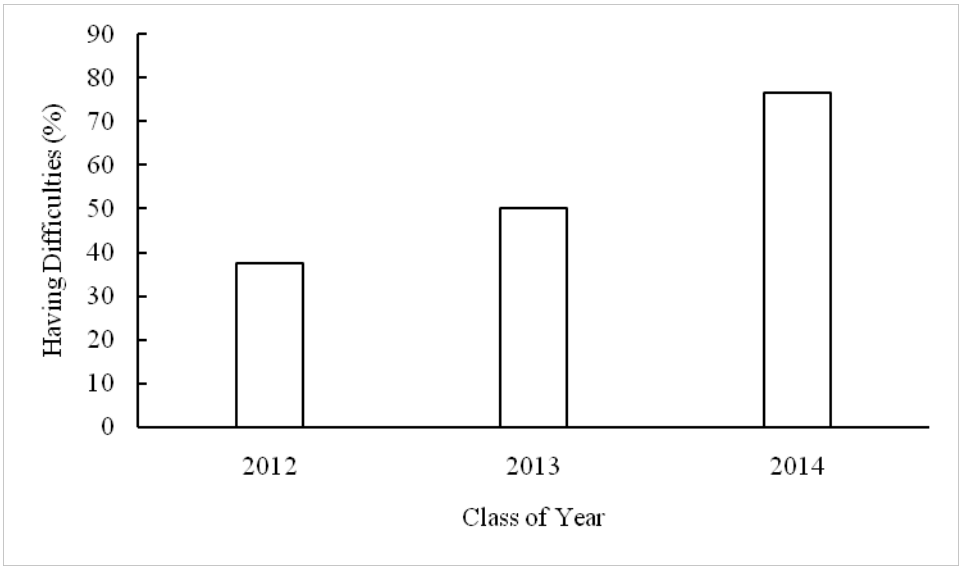

Figure 2. The Difficulties in Making the Right Evaluation Instrument

In the 2012 class, students who had difficulty in determining the right evaluation instrument reached 37.5%, increasing to 50% in the 2013 class and the last increase peaked in the class of 2014 which reached 76.47%.

Data on difficulties experienced at the evaluation stage given to respondents interviewed as a whole can be seen based on the following chart:

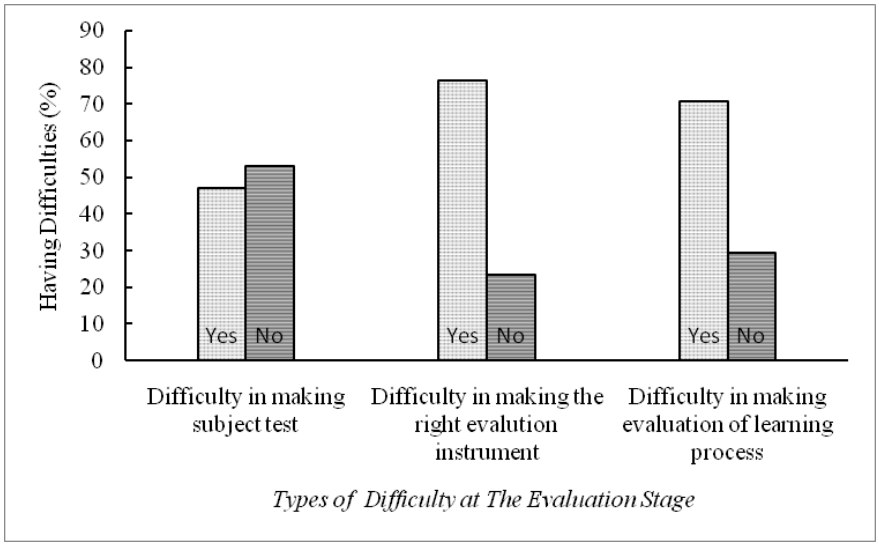

Figure 3. Percentage of the Difficulty Data at the Evaluation Stage

The dot pattern bar diagram shows that student teachers experienced difficulties while line pattern bar shows that student teachers had no difficulty. So, it appears that the highest percentage of the evaluation phase difficulty lies in the difficulty in making the right instrument. Furthermore, by using coding based on questionnaire data, interviews and observations found the causes of these difficulties are summarised in the following three reasons:

Student teachers do not understand how to prepare evaluation instruments based on learning objectives

Making an evaluation instrument in the form of a question is indeed not easy, besides having a subject assessment there is also a study of difficulty level and feasibility. The first cause of this difficulty is that student teachers do not understand the preparation of questions based on the learning objectives they want to measure. Student teachers are not able to make questions that are able to measure the achievement of students from the subject side. This is evident from the respondents who explained their opinions: *"While conducting teaching practice had difficulty in making*

questions to take the test scores, they admitted that all the questions were difficult, so I was confused." [M2] The similar also experienced by F2.

"In advance, I gave an example d, but when I wanted to modify the question to develop question, students said it was difficult so I was confused about how to make a variety of questions to be able to measure the success of learning." [F1]

"It's difficult to determine the difficulty level of questions for students. Often they cannot answer any of the questions, sometimes it is too easy." [M1]

This shows that F1 and M1 do not understand the standard of making a question so that the condition of students who cannot work on the problem makes them confused in making questions, even though the question itself should have a fixed standard.

Arranging the questions that are appropriate to the learning objectives to be measured, calculating the validity and reliability of the question items, and the index of difficulty of the questions are things that are less mastered by student teachers. Based on observations and confirmation data to lecturers, this occurs because of the lack of training in making questions when following the course on campus.

Students do not understand how to prepare evaluation instruments based on the level of thinking of students

(Hanifah, 2019) tells, a good evaluation instrument, in addition to having to match the learning objectives, must also pay attention to students' thinking abilities. The thinking ability measured in the Curriculum 2013, the secondary school curriculum that is used in Indonesia, is high-level thinking skills. This is what the teacher needs to pay attention to in making an evaluation instrument. But these became the second cause of the difficulties, that student teachers have not been able to arrange questions that measure the level of thinking of students, in this case what is meant in the Curriculum 2013 is high-level thinking skills. Student teachers have not been able to distinguish

which questions measure thinking skills involving analytical skills (C4), evaluation abilities (C5), and creative abilities (C6) on Bloom's Taxonomy.

The distribution of components of the student questions tend to be at levels C1-C3. This is as stated by a respondent: *"The questions in the book tend to be too easy for students. If given a different question, the students cannot answer. This is because they are accustomed to being taught only procedural skills, the C1 and C2."*[F5], and when asked further about the example question that reaches the level of thinking, F5 also has difficulty making it.

Further data from other respondent is stating: *"It's difficult if I make it myself, so it's more often I imitate the questions from the book and change only the numbers. Selection of questions also does not pay attention to the level of thinking because I lack the understanding in distinguishing them."* [F6].

Based on the observation data of the questions they made, F5 and F6 only gave questions at level C1-C2 only, demonstrating an understanding of the theory of Bloom's taxonomy that is still lacking; so, they have difficulty and finally ignore making questions based on Bloom's taxonomy. This situation makes learning not true, it's called pseudo. Furthermore according (Vinner, 1997), the same student, will probably not understand that something is wrong with his or her behavior. The point is that a situation which is considered by the educational system as a learning situation or a problem-solving situation is not necessarily such a situation for the student. I would like to call such situations pseudo-learning or pseudo-problem-solving situations. (Natalia, 2018) Pseudo is one of the most dangerous threats to making the test results not to be an accurate measuring tool for detecting the learners' ability. Therefore, it is necessary to avoid the occurrence of pseudo which of course not only makes tests that can be an accurate measuring tool, but for the benefit of learning that is more valuable which is to achieve the objective of the real learning.

Students do not understand how to prepare evaluation instruments based on cognitive, affective and psychomotor aspects

The third cause of difficulty is the measurement dimension which consists of cognitive, affective and psychomotor aspects. Student teachers are only accustomed to compiling test instruments to measure cognitive aspects only, so to measure the affective and psychomotor aspects is a difficult thing to do. Moreover, in mathematics subjects both aspects are very rarely measured. According to Yusuf (2015: 93), a test maker for certain aspects, should develop a "blueprint" as precisely as possible, which can represent all aspects of knowledge, attitudes and behavior to be measured; according to the objectives that have been formulated.

Based on interview data and observations, all the teaching practice student teachers who were interview respondents made evaluation instruments that only measured cognitive aspects. This of course narrows the meaning of mathematics learning. This can be seen from the student statement: *"Lack of understanding how to arrange evaluation instruments in the learning evaluation course, so in my understanding is just to see if they are already able to work on the given question or not."* [F5]

The same thing was experienced by all interview respondents that they only conducted evaluation instruments by making questions that tested the completeness of cognitive aspects only. This further proves that evaluation instruments made by student teachers cannot be a measurement tool for the learning achievement.

To fix the problems of the difficulties of student teachers in determining the right instrument, this can be done on the learning evaluation course on campus. The course is directly related to all forms and types of instruments used in learning. The results of this study can be a consideration for lecturers who will teach learning evaluation courses.

Discussion

Success in doing the right teaching practice will be the basic seed for the creation of a teacher who is able to educate properly. Many things are learned by student teachers when conducting teaching practice. In addition, student teachers become proficient in the subject matter and skilled in the delivery of lessons to learners (Atputhasamy, 2005).

As specifically in the evaluation phase, besides learning to become more proficient in preparing themselves to become teachers, conducting evaluations is an exercise for the C5 thinking process in Bloom's taxonomy. This exercise certainly has a multiplier effect for student teachers both personally and in carrying out their roles to become a teacher later.

Based on the data, 60% of students have difficulties in making the right instruments for evaluation, and then the researchers tried to observe the patterns of trends that exist. The patterns of these tendencies then lead to assumptions. The increasing trend in the percentage of students who experience difficulties each year can be caused by two factors. The first factor can be caused by a decrease in the quality of teaching carried out by lecturers in the Mathematics Education Study Program. These assumptions were raised from data on service decline carried out by teaching practice advisors in each class. Teaching practice is one of the compulsory subjects in the Mathematics Education Study Program to prepare students as prospective mathematics teachers.

The second factor can be caused by the increasing demands of the marketplace. Changes in the times have a big influence on the world of education. Increasing the standard of expertise that must be possessed by the teacher adds to the difficulties of students in conducting teaching practices. These assumptions are shown from the data, the overall difficulties experienced by students tend to increase each year, at the same time the implementation of teaching practice does not meet school expectations.

This study has not included English language skills, the use of information and communication technology and some of the expertise needed in the era of industrial revolution 4.0 as a potential factor to become student difficulties. This research only refers to the basic teaching skills that a teacher must possess. If the skills included in this aspect of the study are likely to increase the percentage of student difficulties during teaching practice, then this is a concern for the Study Program in universities.

The most difficulties experienced by students when implementing teaching practice include difficulties in determining the right media, difficulties in implementing existing theories, difficulties in managing the classroom, difficulties in determining the right evaluation instruments, and difficulties in determining the evaluation of the teaching and learning activities. Although in general, both student teachers and schools are satisfied with the implementation of teaching practice.

Conclusion

Based on the results and the discussion on this study, it can be concluded that:

a. There are 60% of students who have difficulty in making instruments to measure the results of student learning outcomes. Moreover, students also have difficulty evaluating the teaching and learning process.
b. There are three types of categories of difficulties for students in conducting evaluations, namely:
    - Making Instruments based on validity and reliability categories, and it was caused by the lack of training in making instruments on class of evaluation.
    - Making evaluations based on levels in Blooms taxonomy, and it was caused by students lack of understanding of Blooms taxonomy material and implementation in making questions.

- Making evaluations based on cognitive, affective and psychomotor aspects. This is due to the conditions of the learning environment in Indonesia which is still focused on just a cognitive assessment so that the teaching and learning process often does not make evaluation instruments from cognitive and psychomotor aspects such as the revised edition 2013 curriculum requirements.

Suggestions

Based on the information and findings obtained during the research process, the researchers put forward some suggestions as follows:

a. This study requires a relatively long time because it involves graduates. For researchers who will carry out similar research need to consider this.
b. For similar research, researchers strongly recommend the use of information and communication technology to facilitate the distribution of questionnaires and to conduct interviews.
c. The findings in this study need to be a serious concern for the Mathematics Education Study Program in improving the quality of graduates. Furthermore, it is expected to be able to renew the curriculum and teaching with the current marketplace needs.
d. For the next researcher it is suggested to add foreign language mastery ability, as well as the ability of industrial revolution 4.0 in the aspect of observation.

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Appendix: The transcript of reduced-interview

Transcript of interview M1

Code	Question	Jawaban
C1	Is there any difficulty to make a problem's test which will be used?	It is hard to define the difficulties degree of the problem's test that suitable for students. Sometime the problem are too hard thus they barely answer anything. However, sometime the problem are too easy for them.
C2	Is there any difficulty to define the evaluation's instrument?	There is only one instrument used here: It is problem-answer test. One subject represented by one problem's test. This rule become obstacle to define the evaluation's instrument.

Transcript of Interview M2

Code	Question	Answer
C1	What exacltly the problem in defining the problem's test?	As lessons continue from the beginning to the end, students seem understand very well in the class. However, they cannot even answer the easy-level problem's test, (maybe it is depend on the students themselves)
C2	Did you mean It is hard to define the proper evaluation's instrument then?	More or less. Today they would understand the lesson. Tommorow they forget already. However, it is becames challenge for me.

C3	How about the evalution procedure? Did you experience the problem?	if you mean the evaluation to define the conclusion of lessons, then the answer is no. However, When PPL the problem is to make the problem's test.
	Do you think there is relation between "Evaluasi" course and all the things you experience in PPL?	I don't think so. Because all this time, the only one course which class can be set is "simple micro-teaching" course, therefore the evaluation is general which learned in the campus. The analysis available did not including the evaluation combined with problems found in the class. Honestly only 30% from everything I learned in the campus that contextual to the real life. I don't know for sure, but maybe it is because the education is flexible. Therefore, there is no equation can be used the problems found in the education system

Transcript of Interview F1

Code	Question	Answer
C1	According to your opinion, What kind of problem you found when you determine the problem's test?	The problems are being discussed and solved very well preveiously. However, when the problem change very slightly, they cannot answer a thing.

	Do you think what is the cause?	I don't think they understand actually. However, they thought that they already understand
C2	A difficulty to define the evaluation's instrument	My understanding about "evaluation" course still not enough. How much more defining the problem to describe their understanding, their reasoning, etc.
C3	Is there any problem you found to evaluate PBL?	Observer-teacher did not always pay attention to me when I gave lesson and I hardly evaluate the teaching-learning activities that I made.

Transcript of Interview F2

Code	Question	Answer
C1	How about the evaluation and to make the problem's test?	It is hard to define the proper problem's test to measure their understanding
	How about the curriculum in our prodi?	It is good enough, especially in pedagogue
C2	How about to make the evaluation instrument?	I made the problem's which related to the subject's lesson. Therefore, I choose from the book used in lesson.
C3	How about the PBL evalution	I rarely did. I even evaluated by observer-teacher and observer-lecturer only in certain times

Transcript of Interview F3

Code	Question	Answer
C1	How to make the problem's test?	I searched from the book related to the subjects
C2	How about to define the proper evalution's instrument?	I observed the students, however my focus major to their result to solve the problem's test and their activity.
C3	How about the PBL Evalution	In the beginning I am shocked. However, when preparing the subject's calss I get the classes evaluation, and think how to make the student interested to my

Transcript of Interview F4

Kode	Pertanyaan	Jawaban
C1	How to make the problem's test?	I searched from the book related to the subject's lesson and the internets
C2	How about to define the proper evalution's instrument?	In the beginning I just followed the curriculum 2013 guidance instruction, in the end I just use the problem's test only
C3	How about the PBL Evalution	I only did it when the teacher and lecturer are present with me

Transcript of Interview F5

Code	Question	Answer
C1	The problem's found to get the problem's test?	The problem's listed in the book's lesson seems too easy for them. However, they cannot solve the slight-different problem's test. This is because they usually thought in procedure competency only.
C2	A problem to define the proper's evaluation's instrument	I have less-understanding in defining the evalution's instrument which learned in "evaluasi proses dan hasil belajar" courses, therefore I only observe their abiliy to solve the problems test.
C3	A difficulties to define the PBL's evaluation	I often evaluate the PBL, however the result still the same

Transcript of Interview F6

Code	Question	Answer
C1	The problem's found to get the problem's test	Not really, because the school have the reference book
C2	A problem to define the proper's evaluation's instrument	It is hard to make the problem's test myself. Therefore, the problem's test often taken from the book's lesson with a little modification in numbers. Problem's test also taken without considering their level

		understanding, because it is hard to differentiate it.
C3	A difficulties to define the PBL's evaluation	Never evaluate the PBL.

Review Analysis Result of Questionnare and Interview

Observation Subject	Percentage (%)	Caused
A difficulties to evaluate	64,71	• Student don't want to evaluate. They are lazy enough to do it. This is because they think that is not necessary in their judgement system
A difficulties to define the proper evaluation's instrument	76,47	• They don't have enough understanding to arrange the evaluation's instruments in "evaluasi proses dan hasil belajar" course. • There is only one instrument: It is problem-answer test. One subject represented by one problem's test. This rule become obstacle to define the evaluation's instrument • An understanding about "evaluasi" courses is not enough. How much more to define the proper problem test to measure the student's understanding
A difficulties to evaluate the PBL Procedure	70,59	• Some of them often evaluate the PBL, however, in the end the result still the same. • Observer-teacher not always pay attention to their lessons. I rarely evaluate education procedure myself • Never evaluate the PBL

I. The Result of works first author: Stevi Natalia

No	Tahun	Judul Artikel Ilmiah	Nama Jurnal
1	2014	Perbandingan Pembelajaran Realistik Mattemataika dengan pembelajaran Konvensional dengan berbantuaan alat pembelajaran	JDP
2	2017	Realistic Mathematics Education: Suatu Langkah Mendidik Berpikir Matematis	JDP
3	2018	The Effectiveness of Think, Talk, and Write Models on Avoiding Pseudo Thinking at Christian University of Indonesia	Asian Studies International Journal
4	2018	Analisis Terjadinya Berpikir *Pseudo* Pada Materi Statistika (Studi Pada Mahasiswa Pendidikan Matematika Fkip Uki)	Proceeding of KNM Indonesia Mathematics Society 2018

II. The Result of works Second author: Candra Ditasona

No	Tahun	Judul Artikel Ilmiah	Nama Jurnal
1	2013	Penerapan Differentiated Instruction dalam Peningkatan Kemampuan Pemecahan Masalah Matematis Siswa	JDP
2	2015	Pengembangan Media Pembelajaran Matematika	JDP

		Interaktif Untuk Materi Bangun Datar pada Kelas VII SMP	
3	2017	Penerapan Pendekatan Differentiated Instruction dalam Peningkatan Kemampuan Penalaran Matematis Siswa SMA	EduMatSains
4	2018	Ethnomathematics Exploration of the Toba Community: Elements of Geometry Transformation Contained in Gorga (Ornament on Bataks House)	IOP Conference Series: Materials Science and Engineering 335 proceeding