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PROMOTING RESPONSIBILITY THROUGH THE MATHEMATICS CAPITA SELECTA COURSE WITH RECIPROCAL TEACHING STRATEGY BASED ON IGNATIAN PEDAGOGY

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Abstract
The purpose of this research is to describe the students' responsibility on the Mathematics Capita Selecta Course with Reciprocal Teaching Strategy based on Ignatian Pedagogy. The competence focus helps students to create an article in the Mathematical topics. The conscience focus is expected to help students hone responsible attitude. And the compassion focus is expected to appreciate diversity. Data analysis method used is descriptive qualitative-quantitative. The subjects are students who take the Mathematics Capita Selecta Course in the second semester of 2016-2017. In this course, lecturer use Reciprocal Teaching Strategy, where students in groups are given the task of discussing a mathematics article, presenting in class, and producing new articles. The results showed that thereciprocal teaching strategy helps students to increase their responsibilities. There is 6 groups can present their articles at the National Conference at Muhammadiyah University Purworejo. This strategy requires students to understand the selected articles and discuss in the classroom. In the aspect of responsibility is very high. On the student reflection, almost all students claimed to always strive to serve and be trustworthy when given responsibility, there is no need to force anything to remain their tasks.

Keywords: Ignatian Pedagogy, Mathematics Capita Selecta Course, Reciprocal Teaching Strategy, responsibility

Introduction

A student of Mathematics Education is prepared as a teacher and or a mathematician. As a teacher, they must have deeply knowledge of mathematics. As a mathematician, students must have a responsibility to develop the mathematical subject according with the times. The Mathematics Capita Selecta isan elective courses in mathematics education program. This course aims to help students to make a small research about latest topic in mathematics. In addition, this course will be very useful for broadening insights of mathematics. They can continue their small research into an undergraduate thesis or as a basic knowledge

to continue the master (S2). The students are expected to be able to review the articles of mathematics and then produce a simple articles on topics they like.

As an elective course, not all students will choose this course. Therefore, students who choose this course are expected to have an interest in mathematical studies and its application. Based on my experience on elective courses, the problem of students' understanding are caused by the lack of motivation. The lack of motivation causes the students to be less responsibility for their election course. Through the learning model based on Ignatian pedagogy, students are expected to be responsible for this course. Because this model not only prioritized the academic ability but also facilitates to develop the social ability. While the reciprocal teaching strategy is a cooperative learning that refers to students to work together in small groups and help each other in the learning process. Activity in this strategy is expected to promote the ability and attitude of student responsibility. Reciprocal teaching strategy makes the basic skills of effective reading comprehension visible to all (Cooper and Greive (2009), Pilten (2016)).

Combination of learning model based on Ignatian pedagogy and reciprocal teaching strategy needs to be implemented in this course. The focus of learning achievement based on Ignatian pedagogy includes competence, conscience, and compassion. The competence focus will help the students to complete the assignment in this course well. While in conscience will help students to develop their responsibility as a teacher or mathematician. The responsibilities are also intended attitude, diligence and seriousness of students to complete their assignment and course activities. In this paper, we will only discuss about the students‘responsibility in Mathematic Capita Selecta course.

Theory

Ignatian pedagogy

Ignatian pedagogy developed into a learning model that develops learners as a whole person. In practical terms, the application of Ignatian pedagogy is usually formulated in a system that has the main elements: context - experience - reflection - action - evaluation. Based on this cycle, a lecturer can assist the student to facilitate the process of learning and developing by gazing at the truth and exploring its human meaning. The basic framework of Ignatian pedagogy can described as follows:

1. Context: The context describes the readiness of students to grow and develop, campus and class environment, and lecturer.
2. Experience: There are two types of experience in learning, namely direct and indirect experience. The direct experience is the events that experienced by the students themselves both inside and outside the classroom. Indirect experience is the experience that students gain from hearing, reading, and looking through various media.
3. Reflection: Reflection is an important element in this model because it becomes the link between experience and action. Reflection is a process leading to personal change that can affect changes their surrounding environment. Reflection means making careful consideration using memory, understanding, imagination, and feelings concerning the field of knowledge learned. The purpose of the

reflection activity is to capture the value of the material learned, to find the interconnection between knowledge and between knowledge and reality, to understand the implications of knowledge and all responsibilities, and to form conscience.

4. Actions: Action is an activity that reflects inner growth based on experience that has been reflected. The action involves two steps, namely growing inner choices and expressing this choices. In the process of learning, action is to interpret the learning outcomes with the mind and heart to realize his knowledgein real life practice.

5. Evaluation: Education is expected to form a human personality intact, intellectually competent, willing to always grow, be religious, and full of love and determination to do justice in service to others. In Ignatian Pedagogy, the achievement of the goal is done by conducting a thorough evaluation on aspects of knowledge, attitude development, priority setting, and action. Evaluation is an activity to monitor the student progress. Evaluation is a systematic process of collecting, processing and deciding upon data about an object for subsequent consideration of assigning value to the object based on a certain criterion. The determination of whether an object is good or not good, pass or not pass, refers to a clear criterion. In the evaluation of learning, the object of assessment is the process and learning outcomes.

Reciprocal Teaching Strategy

Reciprocal teaching strategy is a cooperative learning step. This strategy invites students to work together in small groups and help each other in the learning process. There are four steps to doing this strategy:

a. Composing Questions: In this step, the student asks a question to himself. Steps are used to identify students' understanding of the material they have learned.

b. Predicting Answers: In this step, students connect their knowledge with information from reading and predict answers to questions that have been made by themselves.

c. Clarify: In this step, students clarify answers with reference to material provided by lecturer or other groups.

d. Summarization: In this step, students make summaries to distinguish between important and unimportant things. In addition, reading and evaluation activities are also required.

Method

The type of this research is qualitative-quantitative descriptive. The researcher will describe the results of research based on data obtained in quantitative and qualitative. The students' responsibility are described quantitatively and qualitatively based on the collected data. The subjects of this research are 6th semester student of Mathematics Education of Sanata Dharma University which chooses the Mathematic Capita Selecta course on 2nd semesterof academic year 2016-2017. While the object of research is the attitude ofresponsibility in the Mathematic Capita Selecta course based on Ignatian Pedagogy with Reciprocal Teaching strategy.

The instrument that used in this study is an open questionnaire to explore the context and the responsibilities of students (prospective educators and scientists). Personal and friend's assessment sheets and observation sheets to collect data about the process of student responsibility. Assessment also uses student activity and reflection journals. These activities include discussion, searching for topics, seeking references, preparing proposals, solving problems in proposals, compilingarticles and presenting in scientific forums. This data will be presented descriptively.

Findings and Discussion

At the first meeting, students write about all matters related to the student's decision to choose this course and their family background. Next, the students determine their group and select a mathematic article according to the rules that given at class and then present again in their papers and presentations. Students are given 2 weeks to complete their group assignment.

Based on the questionnaire, most of the students come from Java (82%) especially Yogyakarta. In addition, this class is dominated by students of class of 2014 (64%) and the rest of the students of class 2012 and 2013. This has an impact on their diversity both local origin, motivation, and academic ability. In general, the students choose this course because interested in this course, but also because of a best friend. Through this course, students hope to be easier to learn mathematic articles and find ideas in completing the undergraduate thesis later. During the lesson, students are very enthusiastic in dynamics. This is their first experience in selecting their own articles to be presented and discussing other group in the class.

Students work in groups, either independently or structured in the classroom. Experience starts from the second meeting. At the second meeting, students were asked to report the names of the groups and the titles of mathematic articles that discussed in presentations. In this meeting also determined the order of groups of presenters, discussers and moderators-notes. The meeting also clarified things that were not yet clear in completing the group task. This is also in accordance withthe Reciprocal Teaching Strategy step, (1) the teacher explains to the students thatin the first segment and acts as a model. Lecturer provide insights on the selection of Mathematics articles, extracting material from the article and the things that canbe raised as a follow-up study. Lecturer also provide examples of articles that have been submitted by one of the groups for a brief review.

The second step of the Reciprocal Teaching Strategy is that students are asked to read the lesson material they have provided (in this case chosen by the group) and take the next step: predict the questions that might be asked by the lecturer and friends from other group, answer the questions, and class in the class. This preparation is done in the next meeting and is also done independently by students with discussion in the group.

The next step of the Reciprocal Teaching Strategy is to give students the opportunity to present their opinions or to ask questions when they uncover the less obvious and summarize the points in the subject matter provided. In this case,the lecturer may appoint one of the students to read the summary. Students are

trained to act as lecturer during lectures to encourage other students to participate in discussions.

In this lesson, students begin to present their papers. There are 4 groups that can present their group work. However, at the time of discussion and discussion, the process has not been dynamic and optimal. Some groups are still not confident at presenting, discussing or moderating. Other groups are also focused on their own papers.

At the next meeting, the students completed the revision of the paper. Furthermore, students make simple research proposals as the development of the articles they have presented. The proposal must be completed by the students into a new article to be presented at a national seminar. Lecturer provide assistance in making articles in groups. Articles made in accordance with previously proposed proposals. At this meeting, each group is given the opportunity to discuss in group and do question and answer with lecturer. The lecturer accompanied the group intensively and each group showed an attitude to quickly complete their task by questioning with the lecturer. Groups that have not had the opportunity to discuss with the lecturer, still enthusiastic to wait even until the end of the meeting still seemed the spirit to discuss.

Several groups were given the opportunity to practice the presentation because about 6 groups have been received to be presenters at the NationalSeminar on Mathematics and Mathematics Education at Muhammadiyah University of Purworejo on May 20, 2017. Each group presented their articles, others watched quietly and enthusiastically to give some input, whether related to the material or how the presentation.

In the final lecture held simultaneously held Internal Seminar of Mathematics. At the end of this meeting, the lecturer invited students to reflect on their seminary for a semester when they made an article and presented their study at the National and Internal Seminar. The reflection question is about: experience during this lesson about: (a) group formation, (b) selection of topics, (c) group work, (d) communicating the thoughts and results of discussions, (e) article creation; the real benefits gained by students and the real development of responsible attitudes; and tell related to: (a) things that support (exciting), (b) things that hinder (sad), (c) notes or input during this course.

Based on the student reflection, they say that: in the formation of groups, lecturer give the freedom to determine members of a maximum of 3 people. Most of the students said that forming groups based on the similarity of forces, based on class of class, and the closeness of friendship. There is also a heavy feeling because it is always in groups with one of his friends because all this time in their lectures are always in groups together. Some of the reasons that arise are to makeit easier in determining the time to gather, facilitate communication and feel confident. In determining the topics to be studied in groups, there are groups that can define topics quickly and smoothly, but there are also groups that are time- consuming and time-consuming to determine the topic of group review. The freedom of choosing friends in this group may feel the discomfort in group work.

Students of this course admitted that they are always together in determining the theme of the article, doing the discussion and preparing the presentation. Each

contributes in his group according to their abilities. Among them are some who share roles by searching the literature, translating the selected articles, discussing and preparing presentations. In the presentation, they also share roles in presenting and answering questions from other groups and lecturer. There is a change in them that now does not always play HP during lectures, pay attention to the opinions of other friends and appreciate the differences of ideas and ideas. They also become more appreciative of the time for the tasks assigned during the lecture to be completed.

The most perceived benefit of students based on reflection writing is the group dynamics that contribute to each other's ways, can make other group members comfortable and work well together. Whatever the contribution, all havebeen given and give good results and should be grateful.

The development experienced by students is trying to serve and be trusted when given the responsibility. When you have a responsibility, there is no need to force things to remain trustworthy. Each student must be able to choose and accept any input or individual differences.

Supportive things are members who help each other and can work together. The sad thing is during the seminar. The reason, because it only presents to most of the friends of one class, so cannot convey to the crowd and do not get more input from outsiders.

Based on the observations made by the lecturer that every student will try to understand the material review of math article as possible. This is done either by discussing with friends or with lecturer. Even if the lecture time is over, the students are still discussing either by meeting the lecturer directly or through the WA group. It is possible to encourage students' comprehension skills to be more and data complete the whole task well.

Table 1. Achievement of Responsibility

Indicator	Score	Percentage	Category
Willingness to work together in groups	4.52	90.40%	Very high
Ability to work together in groups	4.25	85.00%	Very high
Willingness to complete the task	4.55	91.05%	Very high
Ability to complete the task	4.17	83.42%	Very high
Willingness to communicate with friends in groups	4.32	86.32%	Very high
Ability to communicate with friends in groups	4.14	82.89%	Very high

Based on the results of Table 1 above, it is known that for all indicators of responsibility attitude, classically can be categorized as very high. This is possible because of the demands that the group can present the results of the study at the National Seminar in order to obtain a better point. Each group strives to complete the assigned tasks as well as possible.

Conclusion

The conclusion of this research is that all the students who choose Mathematics Selecta Capita course have evaluation average of the responsibility

is very high category. In the aspect of competence, the students in their group are able to determine the topic of self-study, conduct group discussion, present study result, make proposal of study development, make article and present at National Seminar and Internal Seminar. In the compassion aspect, students are increasingly willing and able to complete their responsibilities both individually and in groups shown by indicators working together, completing tasks and communicating very high. So that as many as 6 groups can present their articles at the National Conference at Muhammadiyah University Purworejo.

This strategy requires students to understand the selected articles and discuss in the classroom. In the aspect of responsibility attitude including very high category. On the student reflection note, almost all students claimed to always strive to serve and be trustworthy when given responsibility. When you have a responsibility, there is no need to force things to remain trustworthy. Students are increasingly willing and able to complete their responsibilities both personally and in groups shown by indicators working together, completing tasks and communicating very high. So the this implementation can be said to be successful and useful for improving students' skills and graduation of students who choose this course and improve the attitude of responsibility.

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