

CHAPTER I

INTRODUCTION

1.1 Background of the Study

Understanding of God's truth is important for students to recognize God's greatness through His creation. In Christian education, understanding God's word and apply it in responsible ways is the focus of knowledge and learning (Brummelen, 2002, p.36). It implies that it is a task for Christian teachers to help students to understand the greatness of God and God's work in His creation that are in order and harmony. The knowledge that can help students to see and understand God's greatness in His creation is mathematics.

Mathematics is very useful and important in most of the human life aspects. The purpose of learning mathematics is to deepen students' understanding of God's creation and to use their understanding in order to accomplish God's calling (Brummelen, 2002, p.203). Through learning mathematics, students can realize that God is faithful and trustworthy in upholding the world by the orderly mathematical pattern, law, and the formation that He put in His creation (Brummelen, 2002, p.203-204). It means that mathematics is the needed knowledge to be learned in order to understand how God's work in making all His creation orderly.

Indonesian Education Department also considers that mathematics is needed for students in school. The regulation of the National Education Department of Indonesia Number 22 in 2006 stated that one of the goals in learning mathematics is

the students will be able to understand the mathematics concept through explaining the relation between concepts and applying the concepts or algorithms accurately, efficiently and appropriately in order to solve the problem (Wardhani, 2008, p.1-2). A similar thing also stated by Hatfield, Edwards, and Bitter (2005) that “Mathematics education is more than ‘learning the steps’ for working problems; rather, it means understanding mathematical concepts as a ‘package of knowledge’ that supports the way children naturally approach learning and doing mathematics”. In other words, conceptual understanding is an important aspect of learning mathematics.

Along the internship program, the researcher was given the opportunity to teach grade eight students about Functions. In the beginning, the researcher was using a direct teaching method. Based on the researcher’s teaching experiences and observation in grade eight at SMP ABC, the students showed a good attitude and they were attentive during the teaching and learning process. Generally, most of the students were passive and they just took a note everything that was written on the board or was shown in the power point slides. However, the students were being active when the researcher asked them to solve the question and allowed them to discuss with their peers. There were also a few of students who have high ability and achievement in mathematics like to do the exercise individually. The researcher also found that some of the students like to have a discussion, especially the students who have a low ability in mathematics usually asked their friends to show them the steps for completing the exercises.

When the researcher gave the example and asked the students to solve the problem, they could do it correctly and they said that they understood. However,

when the researcher gave exercises that still used the same concept, half of the students often said that they did not understand how to solve it. They looked confused when faced another form of the problem, then they tended to ask their friends. This shown that a half of the students did not really understand the concept correctly. Further, once the researcher gave a test in the pre-cycle by using paper-pencil based test, half of the students (11 students out of 22 students) did not pass the passing grade, which was 72 (see Appendix A-6). They confused and they had difficulties to understand and apply the concept in solve the problems. The researcher identified that the reason was because the students had no time to think and digest the mathematical concepts that were written on the board in the form of formulas. Moreover, some of the students usually memorize the formula rather than to understand the concept, and it makes them hard to solve a different type of problem with the same concept.

To confirm the problems that occurred in the class, the researcher also had to interview the mentor teacher, as the mathematics teacher of grade eight students. Through the interview, the mentor teacher told that these students like to have a discussion on doing the exercise because some of them were having a lack of conceptual understanding of mathematics (see Appendix A-5 statement#1&3). Moreover, the mentor teacher also suggests the researcher to let the students have a discussion in a pair to help the low students to understand the concept in solving the problem (see Appendix A-2 & A-6). Therefore, the researcher should use a method that provides the students with discussion in pair.

According to the condition of the students and the problems that occurred in the classroom as described above, the researcher tried to solve it by considering the

condition of the class and the characteristics of the students. The researcher chose Think Pair Share method as the response and action to help the students in enhancing their mathematics conceptual understanding. The Think Pair Share is a model of cooperative learning method. As a cooperative learning method, Think Pair Share could be applied in this class because the students had a diverse of intellectual level. This reason also supported by Djamarah & Zain (2006, p.34) who stated that students diversity in the classroom is one of the foundations in applying a cooperative learning. Based on Made Wena, students who cleverer could help to teach the students who had lack ability, and automatically the passive students would actively participate in the group through cooperative learning (2010, p.189). Cooper stated, “Cooperative learning is an instructional task design that engages students actively in achieving a lesson objective through their own efforts and the efforts of the members of their small learning team” (2011, p.257). Lujan & DiCarlo (2005, p.19) said that Think Pair Share is peer instruction activity that provides students with the opportunity to be actively involved in reasoning and application of concepts also, it can enhance students’ understanding level. It implies that the Think Pair Share could help the students being an active learner and increase their conceptual understanding.

The Think Pair Share method also could provide the students to have a discussion with their partner, and it gives a chance for the teacher to check their understanding. As Fisher & Frey (2007, p.30) stated, “Naturally, there are opportunities to check for understanding throughout the Think Pair Share activity. The teacher can listen in as pairs discuss their responses and can note the ways in which pairs share their responses.” The active learning of Think Pair Share method

also supported through a sharing of students' thought in the class (Eggen & Kauchak, 2009, p.235). Moreover, Adam Barragato said that Think Pair Share allows the teacher to check students' level of understanding and also gives students an opportunity to apply what they learn (2015, p.2). Sampsel (2013, p.5-6) stated that Reinhart noticed that Think Pair Share method, by giving students time to think individually first, increased individual accountability and responsibility for learning and participation in class. The students also were more willing to share ideas with the entire class when the responsibility for the response was shared with the partner; then he concluded that through Think Pair Share, students have the chance to develop a deeper understanding of the topic lesson. Finally, Reinhart (2000, p.480) suggested teachers apply Think Pair Share method in teaching and learning process to improve students' understanding.

However, Think Pair Share method is a cooperative learning that based on constructivism theory. Constructivism defines knowledge as constructions of experiences; the human is not just receiving knowledge but forming, creating, and developing their own knowledge (Mularsih, 2009, p.41). Mularsih said that, based on constructivism, the most important thing of learning process is students' activeness in constructing knowledge through interaction in learning experiences (2009, p.42). Constructivism opposes passive learning; classroom should be a community of learning engaged in an activity, reflection, and creative experiences (Brummelen, 2002, p.32). Brummelen (2002, p.32) also stated that teachers should facilitate autonomous learning, not just supply the material or information.

The point of view of constructivism is different with Christian education perspective. In the Christian perspective of education, God is the creator and the source of knowledge, and according to Brummelen (2002, p.44), the focus of learning is “understanding and unfolding God's revelation through experience observation, conceptualization, and application”. Knight (2006, p. 142) stated that, “It is a part of the task of the Christian educator to evaluate the assumptions underlying those theories in the light of Christian philosophy, and then to build a personal educational theory that utilizes, where helpful, the discoveries of the educational philosophers and theorists.” However, Knight (2006, p. 166) said that the Christian teachers could adapt any educational theory that is appropriate, but it must be determined from the Christian perspective. In applying Think Pair Share method, the teacher should explain and emphasize the basic concept, also ensure students understand it before directing students in solving the problems. The teacher lets students discuss the solution of the problem by applying the concept that is given before, and trains them to respect of each other thought. The teacher is not just the facilitator, the teacher should confirm the students’ thought or answer whenever it is right or not. It implies that Christian teacher could use and adapt Think Pair Share or any other teaching method by some modification based on Christian perspectives.

In conclusion, Think Pair Share method is appropriate to be implemented in order to solve the problem that occurred in the class. It is supported from an educational perspective, which is based on educational theories as well as from a Christian perspective, which from God’s command to share our talents in the community. Therefore, the researcher intended to conduct the research on “The

Implementation of Think Pair Share Method to Enhance Grade VIII Students' Conceptual Understanding in Function at SMP ABC.”

1.2 Statement of Problem

The statement of the problem for this study can be formulated into these following research questions:

- 1) What is the implication of the implementation of Think Pair Share method on grade VIII students' conceptual understanding in learning Function at SMP ABC?
- 2) How does the implementation of Think Pair Share method enhance grade VIII students' conceptual understanding in learning Function at SMP ABC?

1.3 Purposes of Study

The purpose of this study can be defined as:

- 1) To know the implication of the implementation of Think Pair Share method on grade VIII students' conceptual understanding in learning Function at SMP ABC.
- 2) To investigate how the implementation of Think Pair Share method enhance grade VIII students' conceptual understanding in learning Function at SMP ABC.

1.4 Benefits of Study

- 1) For School

This research is useful to inform schools to have more various and better strategies for learning Mathematics that improve students' conceptual understanding.

2) For Mathematics Teachers

- a) To suggest teachers, especially for Mathematics teachers, in teaching and learning process to get an idea of a kind of method that can be used in teaching mathematics.
- b) This research will also help the mathematics teachers to have an optional method in dealing with their students' conceptual understanding.

3) For Researcher

- a) The researcher got ideas of the strengths and weaknesses of applying Think Pair Share teaching method in her teaching skills.
- b) The researcher will be able to improve her teaching skills, especially in teaching Mathematics.

1.5 Definition of Terms

1) Think Pair Share method

Think Pair Share method is the teaching method where the teacher poses a question and gives time for students to think individually, discuss the answer with the partner in a pair, and then share it with the entire class (Kruse, 2009, p.32).

2) Conceptual Understanding

Conceptual understanding occurs when the students are able to name the concept correctly, explain, identify, interpret, and apply a concept (Ansyar, 2001, as cited in Hermawati, 2009, p. 17).