**CHAPTER I**

**INTRODUCTION**

1. **Background**

Education had an important meaning in improving intelligence and the quality of Indonesian human that consistent with developments in science and technology, the development of society, as well as development needs. Demand in the world of education had changed. Teacher was no longer a figure that should be able to teach in meaning move a knowledge into the minds of students, but should encourage students to explore their own knowledge. It was based on constructivism learning theory which states that knowledge was the result of the construction of their own and it was students that should be active in the learning process. Therefore, a good learning was the learning always involves students so that own students who find knowledge and build the concept. With the learning like this, it was expected that students can improve the understanding of concepts included in the subject of mathematics.

Mathematics was one of subjects that important to teach in primary and secondary school. The purpose of teaching mathematics in primary school that to make the students understand mathematical concepts with flexibly, accurately, efficiently, and precisely, as well as having respect the usefulness of mathematics in life that had a curious or critical, attention and interest in studying mathematics, as well as a tenacious attitude and believe their own in solving the problem.

Learning according to the view constructivism was the process constructing knowledge by individual learners in order to give the meaning on a new sensory data in conjunction with previous knowledge. Knowledge was uniquely constructed by each individual learner. Learners will be actively construct their knowledge to understand the world, to interpret new information in a cognitive structure.

One of the problems that related to understanding the mathematics as the cognitive processes were contradictions in students' understanding of a particular concept in mathematics. A mathematics concepts can be understood by a variety of information received that related with the concept. This information may include visual representations, examples, or application. If understandings were not mutually integrate into thinking process of students or even contradict each other, it can lead to mental unbalance in his thinking process. Not the integration or contradict understandings these was a condition called as the cognitive conflict.

So, if there was no common perception (opinion or understanding) which lead to contradiction between two ideas or knowledge that was information / the students' understanding of existing with the new information they will learn, then it was said that had happened conflict between two ideas or knowledge. Like that, if in an individual happen of doubt in choosing one or more than lots of information available in a person it was the conflict. Make a decision or give an answer to specific problems or questions based on specific reasons often create of doubt in the individual to answer it, it was this case we can said had happened conflict in the individual concerned.

In learning activities, the students often had doubt in verifying whether a solution or reason that he argued / give was a solution that true or false. Give an answer or a reason to question necessarily related with cognitive abilities from individuals. In a conflict situation with respect to the cognitive abilities of an individual, where the individual was unable to adjust to the situation cognitive structures encountered in learning, then it was said that existing cognitive conflict inside the individual.

For lead to cognitive conflict can be helped by interventions that given the gift of new information related to a concept which understood by students in learning. Giving conflict intervention aims to strengthening the students understanding of mathematical concepts through a guidance or scaffolding in resolving conflicts.

Cognitive conflict had become part of the discussion on the theory of psychology, especially in the theory of cognitive development (Cantor, 1983). Piaget (Ernest, 1991) had introduced the concept of cognitive conflict. According to Ernest cognitive conflict occurs when there were conflict between the two schemes of knowledge in the form of cognitive structure inconsistency or contradict each other. The conflict between the two schemes of knowledge according to Ernest can be said as the two schemes of knowledge were not mutually integrate. Thus it can be said that the cognitive conflict was a situation where an individual consciousness encountering imbalance (Mischel, 1971). Similarly cognitive conflict was a cognitive imbalance caused by the existence of person consciousness of the existence information that contradict with the information they had saved in cognitive structure. Cognitive conflict may also appears in the social environment when there were disagreement / thoughts between an individual with other individuals in the environment of the individual concerned (Damon and Killen, 1982).

One of material that can lead to cognitive conflict in students was plane geometry. Examples of cases during the observation in school in Makassar. In the discussion about what was the point? Many students said that point was small dot. There also said a small circle. When give the intervention that it given some examples that point like the tip of a pen or pin holes, many students accept that, when given an example of a large sphere that point, there were a confused some students there also said it was true. When in further intervention as given one more example, that the point table in the view from a distance very far, almost all the students seemed confused and doubts with the answer.



**Figure 1.1 Rectangle**

The next example, students were shown a that plane figure as shown above namely rectangle. Then asked the students to explain what they understand about that plane figure. If the student can to explain the section was rectangle because it had four sides that form a right angle and parallel sides of the same length that means they understand the concept of rectangle. At the time the intervention was given in the form of questions or examples for example, shown square section had properties similar to those mentioned in the rectangle. If the response of the students started to seem doubt, confused or concerned for declare that square was a rectangle, then this condition indicates the students was experiencing cognitive conflict.

In the explanation above researchers were interested in finding out more about the cognitive conflict with interventions on students with the research titled "Profile of Cognitive Conflict with Interventions in Plane Geometry Conceptual Understanding". With consideration of students had studied at the previous level and the geometry was also a material capable of causing cognitive conflict in students.

1. **Problems Formulation**

Based on the background had been described previously, the problem formulation in this research is "what is the profile of cognitive conflict with the intervention in plane geometry conceptual understanding?”

1. **Research Objective**

The specific objective of this research is to obtain a description profile of cognitive conflict students with intervention in plane geometry conceptual understanding.

1. **Benefits of Research**

Results of this research will be useful for:

1. For researchers, become the experience and feedback in identifying cognitive conflict students with intervention.
2. For the reader, is expected to be information, a reference for further research on cognitive conflict students.
3. **Term Limits**

To avoid different interpretations of the terms used in this research, it needs to be given the term limits as follows:

1. Geometry conceptual understanding referred to in this research is the information or knowledge of children / students about the material plane geometry that they had learned.
2. Cognitive Conflict referred to in this research is condition of a child or student had experienced doubts, confusion, did not keep on the establishment, and anxiety during the confronted with giving ideas / new information or by giving the intervention related to the understanding that they can understand / they had before.
3. The interventions referred to in this research is giving information or new ideas related to understanding who children had or students that stimulate or can lead to cognitive conflict.
4. Profile of cognitive conflict referred to in this research is overall picture of conflict in the minds of students with mental imbalance due to the condition preliminary understanding students of geometry concept/procedure as opposed with new information as a form intervention.