

# Chapter I

## Introduction

### 1.1. Background

A Christian teacher is more than a facilitator. In his book *Walking with God in the classroom*, Van Brummelen (2009, p. 42) states that:

Christian teacher is a like a shepherd or a guide. Just as the Spirit of truth guides us into all truth (John 16: 13) God calls teachers to guide their students in the way of wisdom (Proverbs 4:11) so that they may fulfill their role in the way God had created and planned for them.

To achieve this, a teacher needs to more than to merely explaining the subject material but also needs to provide a structure and system that can lead the students to understand deeper the meaning of their lives based on the Christian world view. A teacher should be able to set a high but realistic expectation and also has to consider different kinds of learning styles and each student's ability to understand a concept (Van Brummelen, 1998, p.45).

Similarly, Gunther (2007, p. 3) explains that above it all teachers have to acknowledge that in the classroom, the learning objective of instruction that each child should achieve is the same. Gunther (2007, p. 5-6) further states, in the teaching process, teachers always have to remember that children are human who have been created in the image of God. They have their own uniqueness and characteristics. The implication of this for teaching is that teachers should open themselves to any reasonable responses to what they are teaching (Gunter et al, 2007, p. 5-6). Based on Gunther's idea, teachers should consider in their plan what kind of reasonable responses that may be occur based on the learners' characteristics and ability but still be aware of the objectives set for the students to be achieved.

So what does the teachers should do in order to meet the individual needs of every student and achieve the learning objective at the same

time? Knight pointed this out saying that the elements of Christian approach for the education must always develop in a context of what the students' need and situation (Knight, 2009, p.250). So based on this, in order to overcome the problem mentioned above a teacher needs to find different models of teaching that suit their students based on the variety of the students' learning style and needs (Gunther et al, 2007, p.64).

Above all, in reality being a good shepherd is not as easy as reading the manual instruction then applying it.

Based on classroom pre-observation i.e. my practicum in Nias, the writer discovered that it is hard for her students to achieve the objectives even though the writer could see their willingness to learn. It was identified that most of the student lack of analysis and visualizing skills of picture the concept that they learn in Biology. In biology we would find that there many abstract concepts that require visualization skills. For example, when we want to teach about cell, whether it is animals' or plants' cell, the students were not able to picture the whole concepts with some visualizing ideas especially if we get into concepts like mechanism of the membrane cell. For my students, it is so hard to imagine abstract things like that and build a concept of how the membrane cell works just based on a description from their textbook.

Based on the above problems the intent of the study is to determine “the implication of demonstration in developing understanding of transport membrane concept in grade XI biology students.”

## **1.2. Statement of the problem**

- 1.2.1. Can the implementation of demonstration strategy develop understanding of the transport membrane concepts in Grade XI Biology students?
- 1.2.2. How is the implementation of demonstration strategy developing understanding of the transport membrane concepts in grade XI Biology students?

- 1.2.3. What are the constraints of the implementation of demonstration strategy develop understanding of the transport membrane concepts in grade XI Biology students?

### **1.3. The objectives of study**

The objective of this study is:

- 1.3.1. To determine whether the implementation of demonstration strategy can develop understanding of the transport membrane concepts in grade XI Biology students or not.
- 1.3.2. To determine how the implementation of demonstration strategy developing understanding of the transport membrane concepts in grade XI Biology students.
- 1.3.3. To determine what are the constraints of the implementation of demonstration strategy in developing understanding of the transport membrane concepts in grade XI Biology students

### **1.4. Benefits of the study**

- 1.4.1. For Teachers

Teachers will be able to improve their professional skills in demonstration technique. The teachers also can improve the students' understanding and make the lesson more enjoyable for them. It will be easier for the teachers to lead the students in obtaining objectives of the learning.

- 1.4.2. For Students

The students will have more opportunities to get involved in the class and develop their understanding of biology concepts. They will be more active and enjoy the lesson and therefore the results of the learning may be better.

### **1.5. Definitions of Terms**

- 1.5.1. Understand : The ability to think and act flexibly with what one knows (Perkins, as cited in *Teaching Science for Understanding*, 2007, p. 16). It means that understanding is

demonstrated by action based on what the student knows. When students understand the students will be able to apply their understanding into an action.

- 1.5.2. Demonstration : a way to present information during teaching and learning process by showing an action that represent a concept along with some clear explanation (Daryanto, 2009, p.403)
- 1.5.3. Students : Grade XI Science students in one of the school in Nias. Most of the grade XI students have difficulties in analysis and visualizing skills of picturing the concept that they learn in Biology.
- 1.5.4. Transport membrane concepts: One of the concepts in biology that the writer taught to her students in Nias. These concepts describe how materials are transported through membrane cells.
- 1.5.5. Concept : an abstract or general idea inferred or derived from specific instances (*Concept*, n. d)
- 1.5.6. Role play : Learning process in which participants act out the roles of other individuals in order to develop particular skills and to meet particular learning objectives (*Letter r teaching terms*, n. d).
- 1.5.7. Experiment : the act of conducting a controlled test or investigation (*Experiment*, n. d).
- 1.5.8. Lecture method : An educational presentation usually delivered by an instructor to a group of students with the use of instructional aids and training devices. Lectures are useful for the presentation of new material, summarizing ideas, and showing relationships between theory and practice (*Glossary*, 2003).
- 1.5.9. Explanation : a statement that makes something comprehensible by describing the relevant structure or operation or circumstances etc (*Explanation*, n. d).
- 1.5.10. Guided question : the fundamental query that directs the search for understanding. It help provide focus and coherence for units of study (Traver, R., 1998)