CHAPTER I

INTRODUCTION

1.1. Background of Problem

Humans receive data through multiple channels, i.e media ,including audio and visual channels (Pavio,1969) as well as touch, taste and smell. Multimedia is most commontly defined as the use of at two of these elements :sound (audio), and text, still graphics, and motion graphics, and motion graphics(visual) (Tannenbaum,1998).To date, the majority of the educational research project do not include the other media of touch, taste and smell. The importance of multiple channels for delivery of educational content can be found in the theory of multi-channels communication which confirms that when information is presented by more than one channels ,there will be addition reinforcement, resulting in greater retention and improved learning(Ellis,2004;Bagui,1998;Daniels,1994).

In the field of distance and online education, traditional print- based materials have been converted into electronic files to be presented online (such as HTML or PDF) for many years now. The better examples of these materials also attempt to include different forms of multimedia enchancement so as to be more interactive ,interesting and engaging for students. These multimedia enhancements include , for example video and audio elements, recorded lecture presentation (audio enchanced powerpoints),interactive audio –enhanced diagrams and simulations , interactive quizzes and crosswords, and graphics. By using these different forms of media content knowledge can then be represented in ways that potentially mesh with (or cater for) different student learning styles; appealing to their individual modal preferences (Birch7Sankey 2008;Moreno&mayer 2007)

Several theories of learning have examined the dual coding of *verbal communication*, including visual, auditory, or articulatory codes, and *nonverbal communication*, which may include shapes, sounds, kinesthetic actions, and emotions. The theories have been linked to multimedia and the research has tested

various classroom applications. This section briefly summarizes pertinent findings for the use of videos.

Multimedia learning theory. Over the past decade a corpus of studies has accumulated that investigates the effects of multimedia strategies on learning. *Multimedia* typically refers to the presentation of material in two forms: auditory/verbal and visual/pictorial (Mayer, 2001). The strategies have included PowerPoint® (Mayer & Johnson, 2008), games (Moreno & Mayer, 2004, 2005), and computer-assisted video learning (Gay, 1986) in a variety of content areas, in addition to auditory and video media.

Multimedia has been found to be highly beneficial to visual in the learners but detrimental to highly verbals individuals (Butler and Mautz,1996). On the other hand, adding animated pedagogical agents dose not seems to increase learning and may diminish instructional effectiveness, because agents often produce cognitive overload for students.

Beyond the basics of PowerPoint how can multimedia be utilized effectively with PowerPoint® in the classroom? Other than posting “dead words” on a screen, can you use movement, music, still images, and videos in PowerPoint® to facilitate learning? To date, those elements have been virtually disregarded and even discouraged by PowerPoint when the technology to embed or stream those media is readily available? For example, among the most popular volumes on PowerPoint Duarte (2008) and Reynolds (2008) give them miniscule attention, yet acknowledge the powerful active cognitive processing effects they can have. They usually caution users to integrate them either sparingly or not at all or to “not overdo it.” Teaching Net Generation students who have no patience and are bored with traditional PowerPoints® suggests that faculty may need “to do” and, maybe, “over do” (Berk, 2009b).

For example, Downing and garmon (2001) did a study of which training methods increased students confidence levels when using Powerpoint. There was recognition that power point recuired some training in manipulating the software, but there was no evidence of understanding power point as a transformative medium or as an inscriptional system.

Several dozen studies indicate that computer-based multimedia can improve learning and retention of material presented during a class session or individual study period, as compared to “traditional” lectures or study materials that do not use multimedia (see Bagui, 1998; Fletcher, 2003; Kozma, 2001; Mayer, 2001). According to Najjar (1996), this improvement can be attributed mainly to *dual coding* of the information presented in two different modalities visual plus auditory, for example (Clark & Paivio, 1991; Paivio, 1986) leading to increased comprehension of the material during the class session, and improved retention of the material at later testing times (Mayer & Moreno, 1998). There is general agreement that multimedia presentations are most effective when the different types of media support one another rather than when superfluous sounds or images are presented for entertainment value— which may induce disorientation and *cognitive overload* that could interfere with learning rather than enhance learning (Mayer, Heiser, & Lonn, 2001).

Finally, a number of studies have suggested that student satisfaction and motivation is higher in courses that use multimedia materials (Astleitner & Wiesner, 2004; Yarbrough, 2001). In one particularly large study, Shuell and Farber (2001) examined the attitudes of over 700 college students toward the use of computer technology in twenty courses representing a wide range of academic disciplines. Students were generally very positive about the use of technology, although females rated the use of technology for learning and classroom instruction somewhat lower than did their male peers.

According my observation in school,this school have many projectors but not all used in this school. Teachers have still using conventional methods. So from this I wanna use this media to improve motivation the student and to interested the student in study expecially in Biology’s topic. This school is experiencing low students’s achiements(<KKM). The KKM is 78,and learning outcome for grade XI students in this school wass still low,62 in average score. From the observation ,it may be concluded that school tends to experiences difficulties in learning Biology. The problem of teacher –centered and low students motivation may responsible from the low student’s achiements in Biology.

Use media that is more modern and attractive as audio visual media can be an alternative solutions to problems. Effective use of audio-visual media has been shown to improve student learning outcomes. At staded by Prabowo(2010) in a thesis entitled" Different in student learning outcomes by using audio-visual media on the subject matter of Human Circulatory System SMA N 2 " that result study using audio-visual media more effective than learning outcomes of students without using audio visual media.

Based on the description above, the authors are encouraged to conduct research entitled: ***The Differentation of Audio Visual and Powerpoint On Student Learning Outcome In Human Reproductive Sytem Topic In SMA Negeri 3 Medan Academic Year 2012/2013.***

1.2. Problem Identification

Based on the background above, problems identified in this proposal as follow:

1. There is a tendency that the ongoing learning activities centered on the Biology teacher (teacher-centered).
2. The student's ability to perform the scientific method or science process skills when learning Biology is lacking.
3. Students are focused on the teacher's theory without create the concept in their own mind. Students will have many concepts but are not trained to find and develop the concept.
4. Used the media is less varied

1.3. The Scope of Study

1. Learning Biology which can improve the students' cognitive learning outcome by using Audio Visual Media and Power Point.
2. Subject matter is limited to the Human reproductive system topic in grade XI IA SMA N 3 Medan Academic Year 2012/2013.
3. This study focused on the presence or absence of affect students in learning outcomes be taught with Audio visual Media and the students in learning outcomes be taught with Audio Visual Media and students who are taught by

Powerpoint to the material Human reproductive System in class XI SMA Negeri Academic Year 2012/2013.

1.4. Research Questions

In accordance with the issues that have been stated, then the problem can be formulated:

1.How the learning outcomes of students who are taught by Media Audio Visual in Human Reproductive System on the material in class XI SMA Negeri 3 Medan 2012/2013 Academic Year?

2.How the learning outcomes of students who are taught by the media Powerpoint in Human Reproductive System in class XI SMA Negeri 3 Medan 2012/2013 Academic Year?

3.Are there different in learning outcomes between students who are taught using Audio-Visual Media and the students who were taught using the powerpoint in Human Reproductive System in class XI SMA Negeri 3 Medan 2012/2013 Academic Year?

1.5. Research Objectives

By the restrictions on the formulation of problem in this study are:

1. To determine student learning outcomes using Audio visual on the subject matter of the human reproductive system in class XI SMA Negeri 3 Medan Academic Year 2012/2013?
2. To determine student learning outcomes using powerpoint on the subject matter of the human reproductive system in class XI SMA Negeri 3 Medan Academic Year 2012/2013?
3. To determine differences in student learning outcomes using Audio Visual and Powerpoint on the subject matter of the human reproductive system of class XI SMA Negeri 3 Medan Academic year 2012/2013?

1.6. Research Significances

The significances that expected from the results of this research are:

(1). For teachers or prospective teachers, can add to the experience and knowledge of the researcher as prospective teachers on the use of audio-visual media and the Powerpoint Media, as well as inputs for biology teachers especially in choosing instructional media to improve student learning outcomes.

(2). For the principal, as an input to be able to encourage teachers to use audio visual media and learning Powerpoint Media as media in teaching.

(3). For educational institutions, the document learning device by applying audio-visual media and Powerpoint Media can be used as reference materials for further study.