CHAPTER I

INTRODUCTION

1.1 Background and Rationale

An important purpose of education is to equip students with potential to develop the knowledge, skills, attitudes and values that will help them successfully participate in a constantly changing society. The reference to a "constantly changing society" is key to understanding that there is not an absolute body of knowledge students can learn. Educators increasingly recognize the need for students to learn with comprehension so that what is learned is retained and practical. The pharmacy curriculum in Thailand has been periodically changes in harmonization with the societal and professional needs. The trend of pharmacy profession is toward more differentiated and specialized practices. Pharmaceutical education must assure that well-qualified planning, development and/or conduct of training pharmacy professions are involved in the curriculum (Jung, Choi, Lim, & Leem, 2002).

In the perspective of pharmacy profession, a new graduate pharmacist is expected to have good verbal and written communication skills, good planning and organization skills, and the ability to work as a part of a team. This concern has led Thai pharmacy council to establish the standard of pharmacy practice for each specialization. Pharmacy schools then develop the curriculum to be harmonized with those standards. These require that graduates must develop the scientific attributes of questioning, challenging, problem solving, systemic thinking, as well as reasoning skills during their college studies. Effective teaching involves more than having students define and explain concepts and facts. To become "life-long learners" students need to "learn how to learn" To interpret new conditions and events, they need to be able to generalize their understanding. That is accomplished by involving students in experience through which they learn how to interrelate and apply concepts (Jadallah, 2000). These qualifications can be developed through active learning and direct experience at the real practice sites. With this type of learning, students will increase their ability to integrate all areas of knowledge needed in solving problems they may face in professional practice situations (Chamberlain, 2003; Simmonds 2002).

To achieve all needed skills, instructor should teach effectively by deploying educational pedagogy, technologies and techniques. Social constructivism was a pedagogy strongly supported to achieve students' deep understanding and creativity (Wink & Putney, 2002). According to the social constructivism knowledge can be achieved through students' social interaction by sharing background knowledge among peers, presenting thoughts, then reflecting, and finally conceptualizing a new body of knowledge. Students can collaborate reflectively to co-construct new understandings. The social constructivist learning should be success by 2 aspects. Those were the social interaction by collaborative learning and the zone of proximal development by scaffolding. The student role is to bring what he/she already knows into relationship with new information through interaction with others. A student is an apprentice, as well as researcher, experimenter, inquirer, interviewer, and an investigative reporter. The responsibility of the teacher is to facilitate the students' learning process and to coordinate the learning with others around a particular content.

To establish social constructivist learning environment is being more concerned and researches have shown that the online learning environment can be structured to serve that (Bonk & Cunningham, 1998; Schneider , Chakroun, Dillenbourg, & et.al., 2002; Stacey, 2002). Moreover, online learning technologies in higher education are being increasingly used and have become more popular. Technological convergence and global media networks offer educators a range of online services include the World Wide Web, email discussion groups that are well suited for teaching and learning environment (Boulton, 2002). Many educators see the advent of online education as an opportunity to provide the resources necessary for students to engage in rich and effective construction of knowledge. It provides learners opportunities to learn anywhere and anytime with access to the internet (Weller, 2002). Internet is the efficient tool as Wilson differentiated three key principles for an efficient use of the internet for learning; the first is it can provide access to rich sources of information, the second is to be able to promote fruitful interaction with contents and the last one is it can effectively facilitate students to overcome challenges, support each others and answer to others' input.

The instructors of online education courses are critical to the success of the learners. Through utilizing the online learning scaffolding model, instructors can incorporate multiple instructional routes to include all learners, fostering active and

social learning. It is up to instructors and instructional designers to challenge these findings, creating an environment that fosters inclusion. Through the facilitation of various student-learning styles, the student may become engaged with the material and take on the responsibility of learning. The complexity of the online learning environment must be based on a conceptual framework utilizing social constructivist elements. Social constructivism provides a theoretical basis for cognitive development. Teaching and learning by the social constructivist approach appears to be an effective way to successfully integrate technology, allowing students to learn by doing, to work with others and to have authentic experiences making the learning relevant and motivating. Research is indicating that building a learner's interaction and exchange is perhaps more important to the learning than any one instructional method or strategy and it appears that technology plays a significant role in this creation. Kanuka & Anderson, (1998) claim social interaction to construct knowledge, as it was currently the most accepted epistemological position associated with online learning.

Studies that evaluated online learning described positive responses by students (Francescato et al., 2006; Jung et al., 2002 ; Swan, 2002). Many researches also studied the student performance on the examination comparing the traditional and online learning. (Cho, Gay, Davidson, & Ingraffea, 2007; Jung et al., 2002) There were some studies focused on the online environment. (Chang, Cheng, Deng, & Chan, 2007; Cho & Berge, 2002; Macdonald, 2001). Some researchers focused their studies on student's characteristics to achieve online learning outcomes (Sadik, 2003). Researchers have just begun to consider how the online environment can imitate traditional classroom discussion, analyze scaffolds to maximize opportunity for learning, and propose ways that online interactions can improve or enhance learning. However, the literature lacked of deeper studies that would provide more detail of the strategies to facilitate social constructivist learning environment especially studying in the form of experimental design.

The online pedagogy based on social constructivism is quite novel, in particular in pharmacy education. In the study "Innovative online pedagogy sparks social constructivist learning in the introductory module of pharmacy professional practice" Theeraroungchaisri, Sakulbumrungsil, Sthapornanon, & Watcharadamrongkun, (2004). found that the third year pharmacy students who enrolled in the innovative online course perceived that a social constructivist

environment existed and their knowledge gained with satisfaction There is no study to compare the strategies used in the online instructional course to achieve social constructivist learning environment and student performance. The efficacy of various online strategies in the context of social constructivism is still debatable. This study was designed to create the online course and investigate what were the different effects between different strategies of interaction; peer-peer (equal knowledge) and peer-more capable peer (different knowledge of content). It is hypothesized that social constructivist learning environment and the students' performance will be achieved in the two different strategies; collaborative (peer-peer equal knowledge) and scaffolding (peer-more capable peer, different knowledge of content).

1.2 Research questions

What is the effect of social constructivist online course on pharmacy student compared between 2 strategies; collaborative (CLG) and scaffolding (SCG)?

1.3 Research Objectives

1. To develop online instructional course according to the social constructivist learning theory.
2. To compare the student perception of social constructivist learning environment (SCLE) in an online instructional course between 2 strategies; collaborative (CLG) and scaffolding (SCG).
3. To compare the student performance of the online instructional course between 2 strategies; collaborative (CLG) and scaffolding (SCG).

1.4 Research Hypotheses

1. Student in scaffolding group (SCG) perceived social constructivist learning environment (SCLE) in the aspects of reflection better than collaborative group (CLG).
2. Student in scaffolding group (SCG) perceived social constructivist learning environment (SCLE) in the aspects of interactivity better than collaborative group (CLG).
3. Student in scaffolding group (SCG) perceived social constructivist learning environment (SCLE) in the aspects of peer support better than collaborative group (CLG).
4. Student in scaffolding group (SCG) perceived social constructivist learning environment (SCLE) in the aspects of interpretation better than collaborative group (CLG).
5. Student in scaffolding group (SCG) had learning achievement better than collaborative group (CLG).
6. Student in scaffolding group (SCG) did not have any learning process (frequency/hits) differently from that of collaborative group (CLG).
7. Student in scaffolding group (SCG) did not have any perception and satisfaction differently from that of collaborative group (CLG).

1.5 The Scope of the study

The social constructivist learning environment (SCLE) was assessed by COLLES (Constructivist Online Learning Environment Survey) to present the student perception of the online learning environment.

1.6 Definition of terms

1. The social constructivist learning environment. It is believed that knowledge can be constructed by students' interaction with meaningful ideas, materials. In this study, the social constructivist learning environment (SCLE) was the students' perception of the learning environment assessed by The COLLES (Constructivist Online Learning Environment Survey), which consisted of 6 aspects;

1. **Relevance** - how relevant is online learning to students' professional practices?
2. **Reflection** - does online learning stimulate students' critical reflective thinking?
3. **Interactivity** - to what extent do students engage online in rich educative dialogue?
4. **Tutor Support** - how well do tutors enable students to participate in online learning?
5. **Peer Support** - do fellow students provide sensitive and encouraging support?
6. **Interpretation** - do students and tutors make good sense of each other's communications?

2. The social constructivist learning strategies

The two different strategies of this online instructional course as to promote social constructivist learning environment were presented below.

1. **Collaborative strategy** (CLG) was the strategy to design situations where all of the community pharmacy management contents were studied sequentially. Every student received similar content and materials.
2. **Scaffolding strategy** (SCG) was the strategy to design situations where students were assigned only one unit of content with time to concentrate and develop expertise, which was later shared with their friends studying other content units.

3.The student performance. In this study, student performance referred to learning outcomes. It could be divided into 2 parts. The first one was the learning product, the other was the learning process

1. Learning product. It was divided as follows.
   - The community pharmacy management knowledge both immediate and retained achievements
   - Student satisfaction
2. Learning process.
   - The time of student spent in the developed online course
   - The frequency (hits) of student presented in the developed online course

1.7 Expected Outcome and Benefits

This study was expected to open up the pharmacy educators to understand how pharmacy students learn from the innovative online instructional course based on social constructivism and these could show how these ideas can be used to conceptualize opportunities and constraints in online learning based on social constructivism.