ABSTRACT

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Name: BRIAN SCOTT PARSONS

Thesis Title: A COMPARATIVE STUDY OF MATHEMATICS SELF-EFFICACY AND ANXIETY LEVELS OF GRADES 10-12 STUDENTS AT THAI CHRISTIAN SCHOOL BEFORE AND AFTER SUPPLEMENTAL PRACTICE USE OF THE MATHEMATICS E-LEARNING APPLICATION WEBSITE KHAN ACADEMY

Thesis Advisor: DR. ORLANDO RAFAEL GONZÁLEZ GONZÁLEZ

The purpose of this study was to determine if students' mathematics self-efficacy could be increased and their mathematics anxiety could be reduced by adding supplemental mathematics practice using the internet based website Khan Academy to increase mastery experiences in solving mathematics problems. The study focused on 156 Grades 10-12 students at Thai Christian School in Bangkok. A research experiment was conducted based on Bandura (1977) sources of self-efficacy (mastery experience, vicarious experiences, verbal persuasion, psychological factors). During the course of the second semester of the 2016 school year, a research experiment was conducted where the students received supplemental mathematics practice by homework recommendations from the researcher sent using the Khan Academy website. A comparison was made between the students' mathematics self-efficacy and mathematics anxiety before and after the research experiment and after the research experiment. There are four objectives in the study relating to
mathematics self-efficacy levels, mathematics anxiety levels, increasing mathematics self-efficacy and reducing mathematics anxiety. There are two hypotheses relating to increases in mathematics self-efficacy and to reducing mathematics anxiety. The major findings in this research were that the average students' mathematics self-efficacy increased, the average students' mathematics anxiety was reduced, mathematics self-efficacy increased significantly for the entire sample and also for each of the program emphasis classrooms (mathematics-science, mathematics-English, English-Chinese). Mathematics anxiety reduced significantly for the entire sample but only the mathematics-English program emphasis classroom saw a significant reduction.