THE RELATIONSHIP BETWEEN MATHEMATICS SELF-EFFICACY AND MATHEMATICS ACHIEVEMENT OF MATHAYOMSUKSA STUDENTS IN THE ENGLISH PROGRAM OF ST. JOSEPH BANGNA SCHOOL

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Abstract: The purpose of this study was to determine the levels of mathematics self-efficacy and mathematics achievement of mathayomsuksa students in the English program of St. Joseph Bangna School and the relationship between the two. The study focused on 198 mathayomsuksa 1 to 3 students of the English program enrolled in the academic year 2012-2013. The students' sample answered mathematics self-efficacy questionnaires to rate their confidence in being able to solve math problems that they had already learned. The students’ test scores in mathematics in the final examination were the basis of mathematics achievement in this study. The researcher had the hypothesis that there exists a significant relationship between mathematics self-efficacy and mathematics achievement of mathayomsuksa students in the English program. Frequency, mean, standard deviation and Pearson Product Moment Correlation were used to analyze the data. The study's findings were: 1) The levels of mathematics achievement of mathayomsuksa students based on the mathematics final test results were relatively high (excellent); 2) The levels of mathematics self-efficacy of mathayomsuksa students were high (complete confidence); and 3) There was a significant and positive relationship between mathematics self-efficacy and mathematics achievement of mathayomsuksa students, meaning students with higher self-efficacy had higher scores in mathematics achievement test. These results are consistent with previous researches showing a significant relationship between students’ self-efficacy and achievement.

Keywords: Mathematics, Self-efficacy, Achievement, Mathayomsuksa students, English Program

Introduction

Students’ ability to learn mathematics has been the concern of researchers for many years. Research field concerning student success in mathematics has been dominated by previous mathematics achievement. There has been also a great deal of discussions about students and their self-efficacy concerning mathematics.

Self-efficacy is an important concept in social cognitive theory, which has been widely recognized as one of the most prominent theories about human learning (Ormrod, 2008). First developed by Albert Bandura (1977; 1986), self-efficacy refers to learners’ beliefs about their ability to accomplish certain tasks. Many researchers, including Bandura, have demonstrated that self-efficacy affects human motivation, persistence, efforts, action, behavior, and achievement (Bandura, 1977; Zimmerman, 2000).

Although numerous studies have been conducted on the relationship between attitude toward mathematics and mathematics achievement, comparatively there was a deficiency of research in examining the relationship between mathematics self-efficacy and mathematics achievement. (Liu & Koirala, 2009). Also, self-efficacy particularly regarding mathematics has been found to be related to mathematics achievement in western settings (Hackett & Betz, 1983; Pajares & Graham 1999; Pajares & Schunk 2001; Zimmerman, 2000), however, very less is known how self-efficacy operates in non-western population, particularly in Asian samples.

Pajares and Miller (1994) noted that the years in middle school (mathayomsuksa 1 to 3) are particularly significant for girls because during this time self-perceptions of ability emerge and girls in middle school are thought to show less interest in math and report higher levels of anxiety.

However, there were some studies that showed that girls from single-gender schools performed better than girls from co-educational schools. According to Tully and Jacobs (2008), women from single-gender secondary schools displayed the high self-perception of mathematics ability. But they also found out in their same research study that many students failed mathematics due to low self-efficacy.

Mathematics is also a big concern of Thai educators considering that based on Organization for Economic Co-operation and Development - Programme for International Student Assessment (OECD – PISA) 2009 results, Thailand ranked 48th among the 65 countries assessed in the domain of mathematics. The mean score of 419 of Thailand was statistically significant below the OECD average (OECD, 2010).

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