A STUDY ON THE PERSPECTIVES OF MATHEMATICS: ENDING THE NEGATIVE CYCLE

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BACKGROUND INFORMATION

The goal of this project is to gain insights into the underlying factors that contribute to the beliefs and attitudes about mathematics, which are experienced by pre-service elementary school teachers (PSTs). A teacher's belief in and confidence in teaching mathematics can have a profound impact on the quality of teaching. (Chen, Zhang, & Pintrich, 2006; Evertson, 2008). The study of students and adults with positive beliefs in mathematics has led to believe that positive belief in mathematics students is beneficial in learning mathematics, which can influence the thinking of mathematics teachers and the learning of future students. Ultimately, these beliefs in mathematics must be addressed by teacher educators, so that pre-service teachers are motivated to teach mathematics. A lack of belief in teaching mathematics was found to be a barrier to teaching mathematics effectively (Gross, 1993). Therefore, it is crucial to begin with strong beliefs in mathematics and take a proactive approach to teaching mathematics. It is also important to recognize the impact of these beliefs on the future generation of teachers. If the students are not confident in their ability to successfully teach mathematics claims that were previously taught using the same teaching procedures will not be effective. This study is designed to conduct a survey of elementary school students in the interview, specifically examine some of the factors that contribute to the negative cycle in the first place.

METHODOLOGY

This pre-service teachers (PSTs) for different schools, who would or would not teach mathematics for their main certification. The majority's majority were noted to the study's results regarding these beliefs about teaching mathematics and their past experiences with teaching mathematics. The intervention was designed to study teachers in their beliefs on the importance of mathematics, as well as the potential influences of the teachers' attitudes.

Data analysis used a statistical method approach to evaluate relationships between the PSTs' beliefs about mathematics and their performance in teaching mathematics. Cross-tabulation analysis of data was conducted using a chi-square test. Descriptive statistics were used to analyze the data, and inferential statistics were used to compare the groups on various aspects of the study. In general, the results indicate that beliefs about teaching mathematics are related to the beliefs about the importance of mathematics and the past learning experiences of the PSTs.

SURVEY QUESTIONS

Questions regarding their career beliefs on mathematics (participation, causality) were best represented with strongly agree, agree, disagree, strongly disagree.

1. Mathematics is exciting and necessary for everyone.
2. People who are good at math do not need to work hard to do well.
3. Mathematics is a tool that helps us think critically.
4. How would you describe your level of enjoyment in mathematics? High, above average, proficient, below average, or low.
5. How much do you like doing math?
6. How much do you like doing word problems?
7. How confident are you that you can successfully teach mathematics in today's schools?

We found that 88% of PSTs claim that their beliefs about mathematics are directly influenced by their previous education experience. Additionally, 78% of PSTs claim to have anxiety when doing mathematics. It is important to note that PSTs’ lack of confidence in teaching mathematics is highly correlated with the finding that previous experiences where mathematics was taught with a greater emphasis on memorization of procedures and finding correct answers quickly. This is problematic since these students want to be future elementary teachers who will be required to teach mathematics. These findings are the first step in understanding where these beliefs come from and how they can be addressed in mathematics education courses.

Specifically, that 71.9% of PSTs that indicated a high level of anxiety were taught with an emphasis on understanding. In fact, 76.5% of PSTs who were NOT confident in their ability to successfully teach mathematics claim they were taught with an emphasis on procedures and an emphasis on memorizing sequence of steps to solve problems. Additionally, 82.3% of PSTs who were NOT confident to teach mathematics were taught with an emphasis on finding answers quickly.

Conversely, 63.2% of PSTs who were confident in their ability to teach mathematics were taught with an emphasis on understanding. These same PSTs claim they are NOT embarrassed to make mistakes when doing mathematics and 63.7% believe that you need to work hard to do well in mathematics.

CORRELATIONS BETWEEN VARIABLES

In addition to the above observations, we also found that the level of confidence that PSTs had in teaching mathematics in the future was directly correlated with their views on anxiety and their confidence in teaching mathematics. If PSTs were taught with an emphasis on finding answers quickly, they were more likely to exhibit a higher level of anxiety. If PSTs believed that mathematics was the most important subject of their school experience, they were more likely to be confident in teaching mathematics. This suggests that PSTs need to be taught with a greater emphasis on understanding, and less emphasis on memorization and finding correct answers quickly. PSTs need to be taught with an emphasis on understanding, and less emphasis on memorization and finding correct answers quickly. PSTs need to be taught with an emphasis on understanding, and less emphasis on memorization and finding correct answers quickly.

REFERENCES

