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# Teacher Quality in Teach for America Alternative Certification

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# Purpose

The purpose of this study was to understand the mathematical knowledge and concepts of self-efficacy teachers have in the Teach for America (TFA) program.

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# Teach for America (TFA)

Teach for America (TFA) is a non-profit organization formed in 1990 with the intention of sending college graduates to low-income schools to make a difference for the underserved students.

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# Research Questions

1. What level of self-efficacy did TFA teachers possess?
2. Was there a difference in mathematical knowledge between undergraduate majors for TFA teachers?
3. Was there a difference in concepts of self-efficacy between undergraduate majors for TFA teachers?

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# Methodology

Sample: 22 TFA teachers (22 for mathematics content;  
19 for concepts of self-efficacy)

Instruments:

- New York State Content Specialty Test (CST)
- Mathematics Teaching Efficacy Beliefs Instrument (MTEBI)

Quantitative methods:

- Independent Samples *t*-tests
- Analysis of Variance (ANOVA)

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# Mathematics Teaching Efficacy Beliefs Instrument (MTEBI)

Mathematics Teaching Efficacy Beliefs  
Instrument (MTEBI) two subscales:

- Personal Mathematics Teaching Efficacy (PMTE) specifically measures a teacher's self-concept of his or her ability to effectively teach mathematics.
- Mathematics Teaching Outcome Expectancy (MTOE) specifically measures a teacher's belief in his or her ability to directly affect student learning outcomes.

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# Results of Research Question 1

TFA teachers had statistically significant higher scores on the PMTE and MTOE than neutral values (*t*-test).

The effect sizes for both PMTE and MTOE were very large. This means that TFA teachers had high levels of perceptions of self-efficacy.

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## Results of Research Question 2

TFA teachers were grouped according to their undergraduate college majors.

Three categories were used to group teachers: liberal arts ( $N = 8$ ), business ( $N = 9$ ), and mathematics related ( $N = 5$ ) majors.

For mathematical knowledge, the one-way ANOVA revealed a statistically significant difference (see Table 1).

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## Table 1: Means and SD for Content

<b>CST Scores</b>	<b>Mean</b>	<b>Standard Deviation</b>
Content Specialty Test		
Liberal Arts ( $N = 8$ )	272.88	14.177
Business ( $N = 9$ )	255.22	20.891
Mathematics ( $N = 5$ )	285.00	20.149
Total ( $N = 22$ )	268.41	21.407

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## Results of Research Question 2

The Tukey HSD post hoc test revealed that mathematics related majors had significantly higher mathematical knowledge as measured by the CST than did business related majors. There were no other statistically significant differences.

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## Results of Research Question 3

No statistically significant differences were found between the various undergraduate college majors and concepts of self-efficacy as measured by the MTEBI. This means there were no differences between college major for concepts of self-efficacy.

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# Discussion

It was found that TFA teachers had high levels of teaching self-efficacy. The literature shows teachers have high levels of student outcome expectancy while they were pre-service teachers. However, outcome expectancy generally declines when the teachers become in-service and the realities of the classroom are encountered (Swars et al., 2007). Teachers in this study had high levels of outcome expectancy despite being in-service teachers.

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# Discussion

Mathematics related majors had higher mathematical knowledge than did business majors as measured by the CST. This was the only significant difference found.

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# Discussion

## Interpretation

1. This means that although mathematics related majors had higher mathematical knowledge than did business majors, no differences were found in self-efficacy. Despite mathematics related majors having higher mathematical ability than business majors, it appears that there is no effect on their perceptions of their ability to teach mathematics well and for their students to learn well from these teachers.

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# Discussion

There is a concern that teachers coming from backgrounds other than mathematics related fields do not have enough mathematics content knowledge to effectively teach mathematics. The findings of this study showed that even though a difference was found for content knowledge between the two majors, perceptions of teaching ability were not found to be different. This is significant since self-efficacy is an important variable in quality teaching (Bandura, 1986; Ernest, 1989). This should be further investigated in future research.

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# Discussion

2. No differences in mathematical ability or concepts of self-efficacy were found between mathematics related majors and liberal arts majors. This could have significant implications for future recruitment of TFA candidates.

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# Discussion

Possible explanation of mathematics and business major differences: Mathematics and liberal arts teaches mathematics from an academic perspective. Business may teach from an applications perspective. This should be further investigated in future research.

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# Discussion

It is imperative that students in high need urban schools are getting the quality education they deserve. We must consistently examine teacher preparation, whether in a traditional program or alternative pathways program such as TFA, to ensure that all children have the highest quality teachers.