

Using a Collaborative Microteaching Project to Measure Teacher Candidate Efficacy in Instructional Strategies

Introduction

Teacher candidates often enter teacher preparation programs with limited classroom experience. Because of this, early exposure to authentic classroom experiences can be critical to develop their sense of teaching self-efficacy. One widely used authentic classroom experience has been microteaching, by which teacher candidates plan, teach, and reflect on lessons in a structured environment, often surrounded by peers (Sheehan & Moore, 2019). Through these experiences, teacher candidates can connect educational theories with instructional practices. Research has supported the claim that microteaching can strengthen teacher candidates' self-efficacy (Sheehan & Moore, 2019; Zee & Koomen, 2016).

Collaboration with peers can further advance a teacher candidates' self-efficacy. Working together enables teacher candidates to exchange ideas, share resources, and make more informed decisions related to classroom instruction (Bauml, 2014). Collaborative lesson planning has served as an effective form of professional learning (Voogt et al., 2015). In addition, collaboration reinforces the peer feedback process. Candidates can use peer feedback to revise lessons, improve instructional materials, and explore new approaches for student learning.

As such, teacher preparation programs continued to play a critical role in the development of teacher candidates' self-efficacy (Feiman-Nemser, 2008). As candidates engage in lesson planning, instructional delivery, and classroom decision making, they begin to develop their professional identity and dispositions for teaching. Yet, relatively little research has been conducted to explore the relationship between microteaching and self-efficacy (Sheehan & Moore, 2019), therefore we sought to examine how peer collaboration influences self-efficacy, especially related to instructional strategies.

Conceptual Framework

This investigation was framed under self-efficacy, which is a concept of Bandura's (1977) Social Cognitive Theory. As described by Bandura, self-efficacy increases through four types of experiences: (1) mastery experiences, (2) vicarious experiences, (3) social persuasion, and (4) physiological and emotional states (Bandura, 1977, 1986). Relatedly, teacher self-efficacy, as described by Tschannen-Moran and Woolfolk Hoy (2001), is the self-perception of teachers' ability to provide effective educational opportunities, especially instructional strategy development. This project implemented each type of experience to challenge teacher candidates' efficacy in instructional strategies; therefore, data were examined through this concept.

Methodology

As part of a larger study, this investigation sought to measure teacher candidate efficacy in instructional strategies after participating in a five-week collaborative microteaching project.

Teacher candidates ($N = 42$) enrolled in a teacher education course at South Dakota State University completed a pre-and post-project instrument using the eight items found in Tschannen-Moran and Woolfhook Hoy's (2001) Efficacy in Instructional Strategies Long Form Subscale. For this investigation, we analyzed data from the five ($n = 5$) agricultural education students. We collected qualitative reflections throughout the project, which were evaluated separately. To determine the effects of the collaborative microteaching project, we analyzed the data using paired sample t -tests in SPSS with an a-priori critical value of .05. The predetermined reliability estimate of .91 for this subscale was provided by the instrument authors (Tschannen-Moran and Woolfhook Hoy, 2001).

Findings

The pre-project and post-project data were collected from a sample of five ($n = 5$) agricultural education majors enrolled in the course, with a pre-project mean of 9.28 ($SD = 1.85$) and a post-project mean of 10.4 ($SD = 2.30$). Thus, efficacy in instructional strategies increased from pre-project to post-project. The paired sample t -test was conducted to determine if this increase was statistically significant ($t = -2.354$, $df = 4$, $p = .039$). The null hypothesis was rejected at the .05 significance level (see Table 1).

Table 1

Paired Sample Statistics for Efficacy in Instructional Strategies

	<u>Pre-Project</u>		<u>Post-Project</u>		r	t	p
	M	SD	M	SD			
Instructional Strategies	9.28	1.85	10.4	2.30	.891	-2.354	.039

Note: 1 = nothing, 3 = very little, 5 = some influence, 7 = quite a bit, 9 = a great deal

Conclusions

The results of this study indicated that teacher candidates' efficacy in instructional strategy increased after completing the collaborative microteaching project. The mean increase (+1.12) supports this conclusion. Grounded by Bandura's (1977) Social Cognitive Theory and supported by Tschannen-Moran and Woolfhook Hoy (2001) descriptions of teacher self-efficacy, the teachers in this investigation demonstrated growth across critical teaching abilities (Tschannen-Moran and Woolfhook Hoy, 2001) including, *respond to difficult questions from students, adjust lessons to the proper level for individual students, implement alternative strategies in your classroom and use a variety of assessment strategies.*

Recommendations

We recommend that teacher education programs implement collaborative microteaching projects to allow their teacher candidates to engage in the peer feedback process and conduct teaching demonstrations in low-stakes environments. This will allow teacher candidates to make increase in their efficacy before entering their own classrooms before and after student teaching.

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