Teacher Self-Efficacy in SBAE Methods Coursework: A Mixed Methods Study

C. Zane Sheehan
Department of Agricultural Leadership, Education & Communications
Texas A&M University
237 AGSC, 600 John Kimbrough Blvd
College Station, TX 77843-2116
651-492-9087
zsheehan@tamu.edu; zanesheehan@gmail.com

Lori L. Moore
Department of Agricultural Leadership, Education & Communications
Texas A&M University
224 AGSC, 600 John Kimbrough Blvd
College Station, TX 77843-2116
979-845-1295
llmoore@tamu.edu

Teacher Self-Efficacy (TSE) is a powerful predictor of teacher success and satisfaction. As novice teachers gain experience, the more efficacious they are in teaching and likely they are to overcome adversity. As School-Based Agricultural Education (SBAE) continues to face a teacher shortage (Smith, Lawver, & Foster, 2018), there is a need for research that examines TSE, specifically in novice teacher candidates. To support "efficient and effective [SBAE] programs" (AAAE research priority five; Roberts, Harder, & Brashears, 2016), our objectives in this study were to (1) describe the effects of an SBAE teaching methods course that emphasized student engagement and the contextual conditions of learning on TSE and (2) qualitatively analyze the TSE of SBAE teacher candidates, particularly student engagement efficacy.

Theoretical Framework

The theoretical framework of TSE (self-efficacy theory; Bandura, 1977) has been comprehensively explored in literature linking it to teacher-based outcomes on instructional effectiveness, management of student behavior, and teacher retention, and student-based outcomes on achievement and quality of relationships (Gibson & Dembo, 1984; Knobloch & Whittington, 2003; McKim, & Velez, 2016; Zee, & Koomen, 2016). While much is known about TSE, there are still notable gaps in the literature related to fostering TSE in preservice teacher candidates. Stripling, Ricketts, Roberts, and Harlin (2008) found that while overall TSE on the Teachers Sense of Efficacy Scale (TSES; Tschannen-Moran & Woolfolk Hoy, 2001) increased as a result of a methods course, teacher candidates were least efficacious in the area of student engagement compared to the other two constructs. Stripling et al. (2008) recommended future research examine the benefits of peer-teaching (i.e., microteaching) in preservice coursework. Additionally, in Tschannen-Moran, Woolfolk Hoy, and Hoy's (1998) review of TSE literature, they determined "qualitative studies of [TSE] are overwhelmingly neglected" (p. 242) and advised researchers consider how "observational data can provide a thick, rich description of the growth of [TSE]" (p. 242). Student engagement TSE becomes particularly important in a methods course where candidates are adopting challenging instructional methods during a highly malleable and influential period of development. Though varying in approach, numerous teaching resources encourage student engagement including context-state-result, mastery teaching (Hunter, 1982), quantum teaching (DePorter, Reardon, & Singer-Nourie, 1999), and SBAE methods texts (Newcomb, McCracken, Warmbrod, & Whittington, 2004; Phipps, Osborne, Dyer, & Ball, 2008).

Methodology

In this convergent mixed methods, nested design study we used the TSES to measure TSE in a SBAE methods course, while concurrently collecting qualitative open-ended surveys after each teaching experience. The reason for a convergent nested design was to better understand this research problem by converging both primary quantitative data with rich, supporting qualitative narratives. Of the 21 students enrolled in the course, 20 completed both pre- and post-course TSES assessment. We analyzed the quantitative data ($n = 20$) using paired sample t-tests in SPSS. We analyzed and open coded the qualitative data ($n = 21$) using deductive content analysis based on the three constructs of TSES: instructional strategies, student engagement, and classroom management. The methods course included six microteaching experiences in the following order: interest approach, lecture-discussion, demonstration, project-based, open-inquiry, and free-choice. Instructors emphasized student engagement using the context-state-result theory and required interest approaches to be at a felt-need level (Newcomb et al., 2004).

Findings

The first objective was to describe the effects of a methods course that emphasized engagement and the contextual conditions of learning on TSE. The results of a paired-samples *t*-test indicated that scores were significantly higher for TSES following a methods course than pre-course. Each of the three constructs of TSES were also statistically significant (see Table 1).

Table 1
Paired Sample Statistics for Teaching Self-Efficacy Scores

	Pre		Post						
Construct	*M*	*SD*	*M*	*SD*	*r*	*t*	*p*	95% CI	*d*
Overall TSE	6.74	0.85	7.47	1.02	.64	4.01	.001	0.35, 1.11	0.80
Instructional strategies	6.64	0.98	7.57	1.00	.56	4.46	<.001	0.49, 1.37	0.82
Student engagement	6.71	0.87	7.44	1.10	.63	3.73	.001	0.32, 1.14	0.80
Classroom management	6.86	0.89	7.39	1.17	.65	2.62	.017	0.11, 0.94	0.57

The second objective was to qualitatively analyze the TSE of SBAE teacher candidates, particularly student engagement efficacy. Quantitative results in the study were supported qualitatively as participants most frequently reflected on themes of (1) instructional planning, (2) struggling with challenging teaching methods, and (3) the importance of student interest and engagement. It is logical that students most frequently discussed instructional planning in a teaching methods course. The richest discussion centered on student engagement. Participant 20 reflected they previously did not value interest approaches and viewed them as a "cheap way to gain attention." Participant 14 shared "I now fully understand the need for an interest approach that establishes a felt-need and connects that need to the project being assigned. Without the connection, students lack the engagement and desire to learn that I strive for in my teaching." A second theme was students' initial feelings of fear and low TSE at the beginning of the course, and gradual build of confidence to the end, which supported the TSES quantitative data. One participant, who initially was very nervous and fearful of microteaching, reflected:

> I have always struggled with confidence… I am really proud of myself and how far I have come. If you would have told me that I would feel this comfortable 3 months ago, I would have laughed… I can't wait to apply my skills [in student teaching]. (Part. 16)

Management was discussed by students least frequently and had the lowest TSE change. Participants primarily focused on the artificial and simulated environment of microteaching.

Conclusions, Recommendations, and Implications

Our study provides evidence that preservice teaching experiences embedded within a methods course significantly shape efficacy. When instructors emphasize student engagement, it is possible to develop student engagement efficacy to a similar, or even greater degree, as both instructional strategies and classroom management efficacy under the same conditions, which may reduce teacher burn out and improve teacher satisfaction. Researchers should further examine TSE to best prepare novice teacher candidates for student teaching and their first years of instruction when TSE is most malleable. We recommend future research, specifically longitudinal studies that follow teachers from a methods course through student teaching and their teaching career, examine the impact of early, rigorous experiences on the cyclical nature of TSE. Finally, teacher educators should evaluate current SBAE teaching methods courses to ensure they support TSE development and encourage student engagement teaching approaches.

References

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*(2), 191–215. doi:10.1037/0033-295X.84.2.191

DePorter, B., Reardon, M., & Singer-Nourie, S. (1999). *Quantum teaching: Orchestrating student success*. Boston, MA: Allyn & Bacon.

Gibson, S., & Dembo, M. H. (1984). Teacher efficacy: A construct validation. *Journal of Educational Psychology, 76*(4), 569. doi:10.1037/0022-0663.76.4.569

Hunter, M. C. (1982). *Mastery teaching*. Thousand Oaks, CA: Corwin Press.

Knobloch, N. A., & Whittington, M. S. (2003). Differences in teacher efficacy related to career commitment of novice agriculture teachers. *Journal of Career and Technical Education, 20*(1), 87–98.

McKim, A., & Velez, J. (2016). An evaluation of the self-efficacy theory in agricultural education. *Journal of Agricultural Education, 57*(1), 73–90. doi:10.5032/jae.2016.01073

Newcomb, L. H., McCracken, J. D., Warmbrod, J. R. & Whittington, M. S. (2004). *Methods of Teaching Agriculture* (3rd ed.). Upper Saddle River, NJ: Pearson Prentice Hall.

Phipps, L. J., Osborne, E. W., Dyer, J. E., & Ball, A. (2008). Handbook on agricultural education in public schools (6th ed.). Clifton Park, NY: Thomson Delmar Learning

Roberts, T. G., Harder, A., & Brashears, M. T. (Eds). (2016). *American Association for Agricultural Education national research agenda: 2016–2020*. Gainesville, FL: Department of Agricultural Education and Communication.

Smith, A. R., Lawver, R. G., & Foster, D. D. (2018). *National Agricultural Education Supply and Demand Study, 2017 Executive Summary*. Retrieved from: https://www.naae.org/teachag/NSD2017Summary.pdf

Stripling, C., Ricketts, J., Roberts, G., & Harlin, J. (2008). Preservice agricultural education teachers' sense of teaching self-efficacy. *Journal of Agricultural Education, 49*(4), 120–130. doi:10.5032/jae.2008.04120

Tschannen-Moran, M., & Woolfolk Hoy, A. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education, 17*, 783–805. doi:10.1016/s0742-051x(01)00036-1

Tschannen-Moran, M., Woolfolk Hoy, A., & Hoy, W. K. (1998). Teacher efficacy: Its meaning and measure. *Review of Educational Research, 68*(2), 202–248. doi:10.3102/00346543068002202

Zee, M., & Koomen, H. M. Y. (2016). Teacher self-efficacy and its effects on classroom processes, student academic adjustment, and teacher well-being. *Review of Educational Research, 86*(4), 981–1015. doi:10.3102/0034654315626801