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

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Abstract

As novice teachers gain experience, they are more efficacious and likely to overcome adversity. The more authentic, rigorous, and frequent the experience in preservice methods coursework, the better prepared candidates are to teach. We used a mixed methods, convergent, nested design to examine the Teacher Self-Efficacy (TSE) of 21 SBAE preservice teaching candidates prior to student teaching. In a teaching methods course that emphasized student engagement and the contextual conditions of learning, we used the Teachers' Sense of Efficacy Scale to quantitatively measure efficacy, while qualitatively measuring TSE using open-ended reflections. We concurrently analyzed data using paired sample t-tests, and deductive open coding and frequency counts. Students were more efficacious, particularly within student-engagement efficacy, following the methods course. While participants most frequently discussed instructional strategies, their richest discussion focused on the value of interest approaches and student engagement. 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.

Keywords: context of learning, methods coursework, microteaching, preservice education, student engagement, teacher self-efficacy.

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Introduction

Teacher Self-Efficacy (TSE) is a powerful predictor of teacher success and satisfaction. As novice teachers gain experience, they are more efficacious in teaching and are more likely to overcome adversity and remain in the profession (Zee & Koomen, 2016). Due to the persistent national teacher shortage in SBAE (Smith, Lawver, & Foster, 2018), there is a crucial need for research that examines factors that influence teacher quality and attrition. Teacher efficacy in under-explored settings, such as preservice teacher education, may provide important insights for teacher success and teacher education preparation programs.

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The intent of this convergent (i.e., concurrent), nested design, mixed methods study was to examine the teachers' sense of self-efficacy of School-Based Agricultural Education (SBAE) preservice teacher candidates prior to the clinical student teaching experience. In the study, researchers used the long form version of the Teachers' Sense of Efficacy Scale (TSES), developed by Tschannen-Moran and Woolfolk Hoy (2001), to measure the relationship between teacher sense of efficacy and microteaching experiences in a teaching methodology course at Texas A&M University. At the same time, the researchers captured rich, narrative descriptions using survey data collected after each microteaching experience. The reason for a concurrent, nested design was to better understand the research problem by converging both the primary quantitative TSE data with supporting qualitative data on participants' perception and experience of efficacy, specifically data about the construct of student engagement TSE.

Review of Literature and Theoretical Framework

The theoretical concept of self-efficacy has notable implications for teaching and learning. Bandura's (1977b) social cognitive theory, of which self-efficacy is a component, represented a major shift in educational psychology and learning theory (Schunk, 2012). Whereas previous educational theory focused on learning as a response to environmental stimuli, Bandura argued that individuals acquire knowledge through thinking and watching—he theorized learning as a social and experiential process (Bandura, 1986; Schunk, 2012). Therefore, learning and how an individual reacts to what happens to them are influenced by both their past experiences and how they think and feel. Bandura (1977a) defined self-efficacy as "the conviction that one can successfully execute the behavior required to produce the outcome" (p. 193). Self-efficacy, specifically the applied concept of TSE, has grown increasingly popular in educational research and professional development.

Teacher Self-Efficacy

A teacher's belief that they can affect student outcomes is an important concept in educational practice and research. For the purposes of this study, TSE is defined as the teacher's perception of their own ability to produce educational outcomes in student engagement, instructional strategies, and classroom management (Bandura, 1997; Tschannen-Moran & Woolfolk Hoy, 2001). Personal perception of one's own efficacy influences motivation and behavior (Bandura, 1997). The concept of TSE has been comprehensively explored in literature linking it to teacher-based outcomes on instructional effectiveness, management of student behavior, and teacher retention, as well as student-based outcomes on achievement and quality of relationships (Gibson & Dembo, 1984; Knobloch & Whittington, 2003; McKim, & Velez, 2016; Moeller & Ishii-Jordan, 1996; Zee & Koomen, 2016). While Gibson and Dembo's (1984) Teacher Efficacy Scale (TES) was once the most common assessment tool, it has become less popular for measuring TSE than the TSES "due to issues with the construct and content validity of the general teaching efficacy factor" (Zee & Kooman, 2016, p. 984). A higher TSE score on the TSES has a stronger association with lower levels of teacher burnout, lower perceived job-related stress, and an increase in teacher retention (Blackburn, Bunch, & Haynes, 2017; Bruinsma & Jansen, 2010; Darling-Hammond, Chung, & Frelow, 2002; Hoy & Woolfolk, 1993). In general, as novice teachers gain experience, the more efficacious they are in teaching, and more likely they are to overcome adversity. Because SBAE continues to face a dramatic teacher shortage (Smith et al., 2018), and TSE is a powerful predictor of teacher and student success (Bandura, 1997), there is a need for research that examines TSE development to enhance student achievement and reduce teacher attrition.

Self-efficacy, beginning with preservice teachers, is cyclical in nature with high and low periods as teachers gain additional experience. The TSE assessment scores for teacher candidates tend to increase throughout a methods course, decrease at the middle of the student teaching experience,

increase to levels above the initial measurement of TSE by the end of the student teaching internship, and then decrease again when the teacher candidate has completed student teaching and has their own classroom (Harlin, Roberts, Briers, Mowen, & Edgar, 2007; Knobloch, 2001; Stripling, Ricketts, Roberts, & Harlin, 2008; Swan, Wolf, & Cano, 2011). The amount of support a teacher receives from mentor teachers, administrators, and supervising instructors mediates their level of TSE (Korte & Simonsen, 2018; Woolfolk Hoy & Spero, 2005). In describing the cyclical nature of TSE, Tschannen-Moran, Woolfolk Hoy, and Hoy (1998) shared that "greater efficacy leads to greater effort and persistence, which leads to better performance, which in turn leads to greater efficacy" (p. 234). In summary, a cycle exists where past performance and future effort together reinforce the teacher's perceived ability to produce a specific outcome, with both high and low periods of TSE, until confidence eventually stabilizes.

Fortunately, a teacher's efficacy is a skill that can be developed and fostered. Woolfolk Hoy and Spero (2005) found that teaching efficacy is most impressionable during early teaching experiences, such as preservice methods coursework and student teaching, and during the first years of teaching. Consequently, researchers recommended that teacher education programs emphasize TSE (Woolfolk Hoy & Spero, 2005). A teacher's belief about their efficacy typically becomes more permanent, and as such, difficult to change, as they gain experience (Tschannen-Moran et al., 1998). Teacher candidates tend to have artificially high levels of TSE during their early experiences with teaching (i.e., student teaching), which tends to decrease during their novice, first few years in the classroom (Woolfolk Hoy, Hoy, & Davis, 2009; Woolfolk Hoy & Spero, 2005). Teacher efficacy is influenced to a substantial degree by past performance and is most malleable during preservice experiences. Efficacy eventually stabilizes, becoming robust and resilient, even with additional experience. Therefore, it is important to create professional training programs and methods courses that focus on developing TSE to prepare teacher candidates for the rigorous and demanding experiences ahead during early career instruction.

TSE During Preservice Methods Coursework

The concept of TSE becomes particularly important when teachers adopt rigorous, unfamiliar instructional methods, such as strategies introduced during a teaching methodology course. High TSE leads to more student-centered approaches to instruction among preservice and in-service teachers, such as project-, problem-, and inquiry-based learning, while teachers with lower confidence and TSE are more likely to use lecture. Additionally, as postsecondary instructors prefer and most commonly use lecture as a teaching strategy, students of these teachers are likely to model similar teaching methods unless instructed otherwise (Estepp, Stripling, Conner, Giorgi, & Roberts, 2013). Novice teachers need quality methods coursework to provide them the TSE they require to confidently use challenging teaching methods.

While research has most commonly examined TSE of novice teachers and teacher candidates during student teaching, it has been less frequently explored during preservice methods coursework. In Zee and Kooman's (2016) synthesis of 40 years of research on TSE, they shared teachers with high self-efficacy are "likely to use a learner-centered and constructivist approach in their teaching, while teachers with low efficacy prefer to use traditional learning formats" (pp. 994–995). Student-centered methods of instruction, such as project- and inquiry-based instruction, are likely to make the most of student interest and engagement and are therefore critical strategies that teacher candidates must possess (Zee & Kooman, 2016). Preservice teacher candidates with higher TSE in methods coursework were better able to teach content, engage students in questioning, and set appropriate expectations for classroom behavior (Emmer & Hickman, 1991; Saklofske, Michayluk, & Randhawa, 1988). The more authentic, rigorous, and frequent the preservice methods and microteaching experience, the better prepared candidates are to teach.

While much is known about TSE, there is still much to learn about efficacy related to student engagement TSE for novice teacher candidates. Each of the three constructs on the TSES (i.e., instructional strategies, student engagement, and classroom management) have been documented to increase as a result of a teaching methods course, however, teacher candidates in SBAE were least efficacious in the area of student engagement (Stripling et al., 2008). In fact, "improving preservice teaching efficacy/confidence in fostering student engagement is crucial" to SBAE (Stripling et al., 2008, p. 127). Though varying in approach, numerous teaching methodologies encourage student engagement, including the context-state-result conceptual model (Sheehan & Moore, 2019), mastery teaching (Hunter, 1982), quantum teaching (DePorter, Reardon, & Singer-Nourie, 1999), and SBAE methods textbooks (Newcomb, McCracken, Warmbrod, & Whittington, 2004; Phipps, Osborne, Dyer, & Ball, 2008).

There have been three recommendations for new research on TSE. First, there is too little information unpacking the benefits of peer-teaching (i.e., microteaching) on TSE in preservice coursework. Furthermore, the research paradigm needs to take a more generative approach, "qualitative studies of [TSE] are overwhelmingly neglected" (Tschannen-Moran et al., 1998, p. 242). Therefore, researchers should consider how "interviews and observational data can provide a thick, rich description of the growth of teacher efficacy" (Tschannen-Moran et al., 1998, p. 242). Finally, student interest is a critical component of instruction, especially as pressures on students and demands for their attention continue to change. Because of the importance of student interest, it is necessary to both quantitatively and qualitatively examine how we can develop student engagement TSE, especially during a highly malleable and influential period of preservice teacher professional development.

Purpose and Objectives

Our research supports research priority five of the American Association for Agricultural Education national research agenda, to develop "efficient and effective [SBAE] programs" (Roberts, Harder, & Brashears, 2016). The purpose of this mixed methods study was to examine how a teaching methods course influenced TSE for SBAE preservice teacher candidates. There is a need for additional literature in SBAE that examines TSE in preservice development and qualitative studies that provide rich, descriptive data about TSE (Stripling et al., 2008; Tschannen-Moran et al., 1998). The objectives of this study were to:

1. Measure the effects of an SBAE teaching methods course that emphasized student engagement and the contextual conditions of learning on TSE, and
2. Establish rich, supporting narratives of the effects and experience of the TSE of SBAE teacher candidates, particularly how the construct of student engagement efficacy emerges or develops over time.

Methods

We conducted our research using a nested design in this convergent, mixed methods study. A nested, mixed methods design allows researchers to better understand a problem by converging rich, supporting qualitative narratives within primary quantitative data (Johnson, Onwuegbuzie, & Turner, 2007; Plano Clark & Ivankova, 2016). We used the TSES instrument to estimate the influence of the intervention of a methods course (independent variable) for preservice SBAE teachers upon overall TSE (dependent variable), and each of its constructs. Overall TSE is comprised of three constructs: instructional strategies, student engagement, and classroom management. We concurrently collected supplemental, qualitative statements after each teaching experience. A convergent, mixed methods design afforded researchers with broad and comprehensive data to explain the interaction between TSE

and preservice coursework.

In the teaching methods course, the instructors emphasized student engagement and the contextual conditions of learning as the intervention. The SBAE methods course—taught by two instructors: one female and one male—included six microteaching experiences in the following order: interest approach (6 minutes), lecture/discussion (14-16 minutes), demonstration (20-25 minutes), project-based (30-35 minutes), open-inquiry (30-35 minutes), and free-choice (50 minutes). Instructors emphasized student engagement by teaching preservice teachers the context-state-result framework (Sheehan & Moore, 2019). Context-state-result is a conceptual framework used within SBAE—developed by Mark Reardon in 2000—that emphasizes the contextual conditions of learning (e.g., student interest, classroom management, clear expectations, etc.) which theoretically moderate the relationship between teaching (i.e., state) and learning (i.e., result; Sheehan & Moore, 2019). We also required students to design their interest approaches/anticipatory sets at a "felt-need" level (Newcomb et al., 2004). The TSES assessments and open-ended qualitative items, in addition to being research instruments, were instructional tools and graded assignments used in the methods course. The researchers, who redesigned this methods course and intervention for this study, used the instruments of the study to influence and analyze student engagement TSE for preservice teacher candidates in SBAE.

Participants

Teacher candidates in SBAE were the population for the study. The sample included students enrolled in an SBAE teaching methods course at Texas A&M University (n = 21). This convenience sample represented a "slice in time" of students enrolled at the time in the methods course during Fall 2018 (Oliver & Hinkle, 1981). We documented the descriptions of the sample of people, the settings, events, and processes, and reduced them into themes as part of this study (Onwuegbuzie & Leech, 2007). Of the sample, 19 were female (90%) and 2 were male (10%). Most of the students were undergraduates (n = 19; 90%); two were completing a graduate degree (10%). The two students in a master's degree program had not completed a teaching methods course of any kind prior to this experience. The age of the students in the course ranged from 20 to 24 years old (M = 22). Students in the course had an aggregate grade point average of 3.42. One student identified as Asian White, non-Hispanic or Latino, while all other participants identified as White, non-Hispanic or Latino (n = 20). The sample, which was representative of the average population of SBAE teacher candidates at Texas A&M University, was the same for both the qualitative and quantitative phases of the study.

A faculty member, external to the research and with no relationship to the course, informed students of the study on the first day of class. The faculty member provided consent forms and explained the research process to the students. Student participation in the research and consent to have their results included in the study was optional. While research participation was optional, the instructors of the course required students to complete all instruments used in the study regardless of their status in the study, as they were regular, instructional components of the course and graded assignments. Researchers analyzed results of students who both consented and participated in the quantitative and qualitative research phases of the study.

Quantitative Method

To address measurement of the effects of a SBAE teaching methods course where student engagement and contextual learning were emphasized, we used a one-group, pretest-posttest research design (Campbell, & Stanley, 1963). To determine the effects of the course we administered the widely accepted TSES, long-form inventory as the quantitative research instrument (Tschannen-Moran & Woolfolk Hoy, 2001). The TSES assessment consists of questions where participants describe their

opinion on a Likert style scale from one (not at all) to nine (a great deal) about specific questions related to TSE. One-third of the questions on the assessment correlate to each of the three constructed factors. The long-form of the TSES assessment consists of 24 questions; the short-form has 12. While the short-form has acceptable reliability and validity in most situations, Tschannen-Moran and Woolfolk Hoy (2001) advised using the long-form specifically for preservice teachers because the factor structure of the instrument is less distinct for novice teachers with less experience. We collected data twice using the TSES long-form: before a methods course and after a methods course/before student teaching; all but one female undergraduate student completed both assessments (n = 20). We analyzed the quantitative data using paired sample t-tests in SPSS. The a priori p-critical value was set to .05; because there were three constructs of TSE on the TSES instrument, the modified level of significance was p = .05/3 = .017. Performing a Bonferroni adjustment allowed the researchers to protect against inflated Type I error, but increased Type II error, or the likelihood of incorrectly rejecting significant differences (Moran, 2003). A post hoc reliability test of the long-form instrument in the setting of a preservice SBAE methods course resulted in a Cronbach's alpha of .97, which we considered acceptable compared to the reliability estimate of .94 provided by the authors of the instrument (Tschannen-Moran & Woolfolk Hoy, 2001). The results in this phase of the mixed methods study provided a measurement of the intervention (i.e., the methods course), which we analyzed qualitatively to provide a rich description of the effect.

Qualitative Methodology

To address the development of supporting narratives of the effects and experience of TSE of SBAE teacher candidates, we used reflective, open-ended surveys to capture student narratives of their perception and experience related to TSE. The survey consisted of three questions: "What happened?" (experience), "So, what does that mean?" (reflection), and "Now, what happens next?" (generalization). These three questions were based on the "Teaching Efficacy during the Student Teaching Semester" conceptual model of Roberts, Harlin, and Ricketts (2006) and Kolb's (1984) experiential learning theory. We collected electronic surveys six times: once after each microteaching experience in the course. Required survey reflections were at least one page in length, with 20-30% of the reflection focused on the experience, 30-40% on reflection, and 30-40% on generalization to the future. Throughout the methods course, students submitted 126 reflection surveys, which when coded, provided researchers with supporting narratives of the TSE of early career teacher candidates.

Following the collection of data, researchers coded data for themes and performed frequency counts. Frequency counts and the use of codes/themes are two of the most common methods of organizing qualitative information (Fraenkel & Wallen, 2007). One researcher analyzed and open coded the qualitative data (n = 21) using deductive content analysis. In deductive content analysis, the researcher works from a theory, or several pre-established concepts, and codes content in relationship to that theory (Lincoln & Guba, 1985; Merriam, 2009). Deductive content analysis was based on each of the three constructs of TSES—instructional strategies, student engagement, and classroom management—as well as for any other unique or distinct themes that emerged. Researchers then performed frequency counts as a second-cycle method of qualitative analysis. Frequency counts of the number of references of each theme, and the percent of coverage of individual themes within each transcript, provided a basic descriptive statistical summary of information (Fraenkel & Wallen, 2007; LeCompte & Schensul, 1999). As researchers often coded participant statements under multiple themes, the percent of coverage of each of the individual themes do not combine to produce an aggregate percentage. Together, descriptive summary information and coded themes of qualitative data resulted in useful information, which researchers converged with quantitative results to produce the findings of the mixed methods study.

Convergence

Upon competition of both phases of the study, we mixed data together to produce meaningful results that a quantitative or qualitative analysis alone would not provide. Quantitative data were the primary, dominant findings while concurrent, qualitative data supported and explained the results (i.e., QUANT. + qual.; Johnson & Onwuegbuzie, 2004). To mix the data, upon conducting the quantitative analysis in SPSS and qualitative deductive coding, the researchers compared, consolidated, and integrated significant findings with relevant themes, frequency counts, and quotations from participants (Johnson & Onwuegbuzie, 2004). Rich qualitative themes and narratives thus supplemented and explained quantitative significant findings, which researchers used to determine the findings and results of the study.

Results

The first objective of this study was to describe the effects of a methods course that emphasized engagement and the contextual conditions of learning on TSE for preservice SBAE teacher candidates. The results of a paired-samples *t*-test indicated that participant overall TSES scores were statistically significant and higher post-course than pre-course (see Table 1).

Table 1

Paired-Sample Statistics for Teaching Self-Efficacy TSES Scores

	Pre-test		Post-test						
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	.0169	0.11, 0.94	0.57

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

Two of the constructs of TSES—instructional strategies, student engagement—were also statistically significant between the pre- and post-tests. Classroom management was not statistically significant after we calculated the Bonferroni adjustment (*p*-critical adjusted value = .0167). Participant scores revealed an increase in overall TSE, and across all three constructs of TSE, but not to the same degree. The classroom management TSE construct produced results different from those of the other two TSE constructs. The effect size (*d*) for classroom management was also smaller than the effect sizes of instructional strategies and student engagement. While two constructs on the TSES were significant, and overall TSE was significant, the differences in means from before the intervention to after, and the effect sizes of each, were not equal and provide important insights into TSE.

The second objective was to qualitatively analyze the TSE of SBAE teacher candidates, particularly student engagement TSE themes. The qualitative findings of this study supported the quantitative results as participants most frequently reflected on themes of (a) instructional planning and struggling with challenging teaching methods, and (b) the importance of student interest and engagement. Participants discussed classroom management least frequently.

Participants referenced overall TSE 231 times, representing 28.42% coverage of total reflective statements. The most prevalent theme within overall TSE was students' initial feelings of fear and low confidence at the beginning of the course. One participant who was initially extremely nervous and fearful of the microteaching experience 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 three months ago, I would have laughed… I can't wait to apply my skills [in student teaching]. (Participant 16)

Participants gradually built confidence and overall TSE as the methods course progressed, which supported the TSES quantitative data in overall TSE.

The primary theme within the three subconstructs was instructional strategies, which participants referenced 304 times, representing 56.96% coverage of total reflections. Students most frequently analyzed their instructional planning and lesson plan design in personal reflection statements. During one such instance, Participant 2 wrote,

> Now I see and can implement the correct kind of questioning in my lessons. My students were affected by my inability to question them correctly. They missed an opportunity for discussion because I did not set them up for critical thinking.

Statements on instructional strategies were often about the challenges of learning emerging and rigorous teaching strategies. Participants discussed how to implement new methods in their lesson planning, mistakes they made using specific methods, and their plans for how they will adapt methods in their future careers during student teaching.

The second most commonly referenced theme in participant reflections, but the theme with the richest narrative, was student engagement (i.e., referenced 222 times, representing 22.33% coverage). Participant 20 reflected how at the beginning of the course they did not value interest approaches and saw them as a "cheap way to gain attention." This changed for many of the students in reflections collected during later portions of the course, closer to the post-course measurement. A participant shared that by the end of the course they believed "it is crucial that [teachers] establish a felt-need because [they] want [their] students to care about the information and skills they are learning" (Participant 13). Participant 14 reflected on their experience overall in the methods course and the importance of student engagement, "I now understand the need for an interest approach that establishes a felt-need and connects that need to the project assigned. Without the connection, students lack the engagement and desire to learn that I strive for in my teaching." Participant's TSE related to their ability to influence student interest and engage learners was both measurably higher on the TSES compared to pre-course, and discussed in the richest detail in reflections, compared to the other two constructs.

Participants least frequently addressed issues of classroom management, which represented 9.69% coverage of total reflections and was referenced only 79 times. When participants discussed classroom management TSE, they primarily focused on the artificial and simulated environment of microteaching (Participants 7, 8, 19, and 20). One participant noted that in a high school classroom, students may be more "immature" and would need additional guidance and scaffolding to use student-centered methods such as inquiry-based learning compared to their college-level peers (Participant 20). Participant reflections suggested microteaching may not be a realistic or genuine environment to foster classroom management TSE development, specifically when compared to how the same environment can develop TSE in the other constructs.

In summary, the methods course intervention, which emphasized strategies to improve student engagement, had a positive impact on participants' TSE. Both the qualitative and quantitative results reflect the positive impact of the methods course. While two of the constructs of TSE were statistically significant, classroom management TSE was not. The changes in instructional strategies and student engagement TSE were greater than that of classroom management TSE, which has notable implications for SBAE.

Conclusions, Implications, and Recommendations

Teacher self-efficacy has important implications for teacher and student achievement.

Grounded in Bandura's (1977b) social cognitive theory, TSE is an instructor's belief that they can influence outcomes related to their teaching. The impact of TSE ranges from increased professional job satisfaction and reduced teacher attrition to improved quality and differentiation of instruction. Three major constructs of TSE—instructional strategies, student engagement, and classroom management—comprise the TSES assessment. Researchers have most often studied the TSE of novice teachers (e.g., teacher burnout, student achievement), less frequently exploring efficacy of preservice teachers, specifically preservice teachers during their methods coursework. When explored within SBAE, researchers have found that methods coursework, while still statistically significant, developed student engagement TSE to a lesser degree than instructional strategies TSE and classroom management TSE (Stripling et al., 2008). It is important for teacher education practitioners and researchers to study and adopt innovate strategies that develop the TSE of novice teacher candidates to the greatest degree possible in all construct areas to ensure teacher and student success.

Conclusions

The purpose of this mixed methods study was to examine how a teaching methods course influences TSE for SBAE preservice teacher candidates. Measuring the effects of an SBAE teaching methods course that emphasized student engagement and the contextual conditions of learning on TSE was the first objective of the study. As a result of the methods course intervention that emphasized engagement—requiring interest approaches to be at the felt-need level and using the context-state-result conceptual framework—participants experienced the greatest TSE growth in instructional strategies and student engagement, followed by classroom management. While participants felt the most efficacious in classroom management before the methods ($M = 6.86$, $SD = 0.89$), following the methods course they were least efficacious in classroom management ($M = 7.39$; $SD = 1.17$) compared to the other two constructs of instructional strategies ($M = 7.57$; $SD = 1.00$) and student engagement ($M = 7.44$; $SD = 1.10$). Participant efficacy developed more for instructional strategies (*M diff.* = 0.73) and student engagement (*M diff.* = 0.93), than for classroom management (*M diff.* = 0.53). The findings from our study differ from previous research in SBAE (cf. Stripling et al., 2008). Our findings demonstrate that when instructors emphasize student engagement in the methods course, it is possible to develop student engagement TSE to the same degree, or an even greater degree, as both instructional strategies and classroom management TSE under the same conditions.

Establishing rich, supporting narratives of the effects and experience of TSE of SBAE teacher candidates, particularly the construct of student engagement TSE, was the second objective of this study. In their methods course reflective writings, participants focused most frequently on instructional strategies (i.e., 304 references, representing 56.96% coverage of total reflections), followed by student engagement (i.e., 222 references, 22.33% coverage), and finally classroom management (i.e., 79 references, 9.69% coverage). It is logical that during a teaching methods course, students would most frequently analyze their instructional planning and lesson design in reflection statements. The richest and most useful narratives and participant reflections were about student engagement. Students noted as they gained more experience, they began to value the interest approach and found strategies focused on student engagement improved their ability to teach. Participants discussed management the least frequently, and they did not report a statistically significant difference on classroom management TSE from pre-test to post-test on the TSES, which may be due to the artificial nature of the simulated, microteaching experience.

Implications

Our study provides additional evidence that preservice teaching experiences, such as a methods course and early career interventions, significantly shape efficacy. Furthermore, based on how the methods coursework and microteaching experiences are structured, it is possible to alter the degree of

TSE development within each construct. Early career TSE development, specifically as early as a methods course, may provide teacher education practitioners and researchers with insights on early intervention strategies to help strengthen teacher confidence and avoid teacher burnout. If a methods course and preservice teacher education program can develop positive efficacy early in a teacher candidate's preparation, the cycle of periods of high and low TSE may be able to be better controlled and nurtured. Early intervention and development of positive TSE may help to create a more satisfying student teaching experience and curb early-career teacher attrition before general teaching efficacy has stabilized.

Recommendations

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 studies replicate and explore innovative teaching approaches, specifically those that focus on student engagement (e.g., context-state-result, mastery teaching), as an intervention. Furthermore, future research, specifically longitudinal studies that follow teachers from a methods course through student teaching and their teaching career, should examine the impact of early, rigorous experiences on the cyclical nature of TSE. It would also be useful to explore the differences in TSE development between teachers who experienced a traditional teacher preparation program, which included a methods course and clinical student teaching experience, compared to alternatively certified teachers. Finally, teacher educators should evaluate current SBAE teaching methods courses to ensure they support TSE development and encourage student engagement teaching approaches. The development of TSE is a useful tool for supporting both teacher and student achievement in modern teacher preparation programs dedicated to producing efficient and effective SBAE programs and addressing the national SBAE teacher shortage.

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