

The Relationship Between Teacher Self-Efficacy and the Professional Development Experiences of Agricultural Education Teachers Candidates

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The purpose of this study was to examine the relationship between the professional experiences of agricultural education teacher candidates during their internship, their sense of teacher self-efficacy, and their perceptions of their preparation. The population included the entire cohort (n=24) of teacher candidates during the 2007 fall quarter at The Ohio State University. Teacher self-efficacy was measured using the Teacher Sense of Efficacy Scale (Tschannen-Moran & Woolfolk Hoy, 2001). Candidates reported high levels of teacher self-efficacy at the end of the experience. The candidates' perception of their level of preparation was similar to their sense of teacher self-efficacy. The largest discrepancy score was for the student engagement domain. Professional development experiences categorized as vicarious experiences revealed the strongest overall relationship with teacher self-efficacy. The experience of observing a first-year agriculture teacher had the strongest positive relationship with overall teacher self-efficacy. This variable explained 11 percent of the variance in overall teacher self-efficacy, and 14 percent of the variance in the instructional strategies domain. Verbal feedback that candidates received from their cooperating teacher was positively related to teacher self-efficacy. The number of courses teacher candidates taught was negatively related to their sense of efficacy in the classroom management domain.

Keywords: teacher self-efficacy, teacher efficacy, professional development, teacher preparation

Introduction/Theoretical Foundation

Secondary agricultural education in the U.S. faces a crisis due to a shortage of qualified, dedicated, and passionate teachers. According to a recent supply and demand study, only 69.8% of newly-qualified graduates in agricultural education enter teaching, and a number of secondary agricultural education programs have closed due to a lack of qualified instructors (Kantrovich, 2007). The shortage of qualified teachers has been further complicated by the National Council for Agricultural Education's 10X15 initiative. This initiative envisions 10,000 quality agricultural education programs in the U.S. by the year 2015. One goal, specific

to recruiting highly-qualified educators is to "meet the demand for well-trained, highly qualified agricultural educators for all roles within the profession and encourage their involvement in appropriate professional organizations" (Team Ag Ed, 2007, p. 18). Therefore, a challenge to the agricultural education profession involves simultaneously remediating the shortage of qualified professionals and preparing even more qualified agricultural educators to meet the goals of the 10X15 initiative. Overcoming the teacher shortage may involve the preparation of future teachers who believe they have the potential for success as an agricultural educator. Investigating personal characteristics associated with teacher

success in the profession may also contribute to improved teacher retention. Therefore, this investigation of teacher self-efficacy will aid agricultural educators as they attempt to prepare and retain more and better teachers.

Bandura's social cognitive theory (Bandura, 1986) and the associated theory of self-efficacy (Bandura, 1997) provided the theoretical foundation for this study. Social cognitive theory explains how people acquire and maintain certain behavioral patterns (Bandura, 1986). The concept of individuals having the potential to influence change, regardless of their skill level, is central to social cognitive theory (Pajares, 2002). Bandura regarded self-efficacy as one of the most important factors contributing to an individual's behavior based upon social cognitive theory. "Beliefs of personal efficacy constitute the key factor of human agency. If people believe they have no power to produce results, they will not attempt to make things happen" (Bandura, 1997, p. 3). Perceived self-efficacy was defined as

... people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances. It is concerned not with the skills one has but with judgments of what one can do with whatever skills one possesses (Bandura, 1986, p. 391).

Bandura (1994) suggested that individual self-efficacy is derived from four main sources: mastery experiences, physiological and emotional arousal, vicarious experiences, and social persuasion. Mastery experiences are generally considered to be the most effective way to foster a stronger sense of self-efficacy. Bandura described an individual experiencing success at a task as building self-efficacy while failure undermines the sense of self-efficacy. Physiological and emotional arousal also affects the sense of self-efficacy. When a person can reduce their stress reactions and alter negative tendencies in the face of adversity, their sense of self-efficacy increases. Vicarious experiences involve observing others succeed at a task, which may raise the belief that the observer could also succeed in performing the task. Social persuasion occurs when an individual is convinced or persuaded that they have the capabilities to be successful at a task.

Self-efficacy studied in the context of teachers and teaching has been labeled *Teacher Self-Efficacy*. Tschannen-Moran and Woolfolk Hoy (2001) defined teacher self-efficacy as "... a judgment about his or her capabilities to bring about desired outcomes of student engagement and learning, even among those students who may be difficult or unmotivated" (p. 1). Like self-efficacy, teacher self-efficacy is derived from the four sources: mastery experiences, physiological and emotional arousal, vicarious experiences, and social persuasion (Bandura, 1994). Teachers with a high sense of teacher self-efficacy believe that students who are unmotivated are still teachable through extra effort and that the teacher can enlist support from the school, the student's family, or the community to influence the student. Teachers with a low sense of teacher self-efficacy believe that little can be done to reach unmotivated students, and the teachers' influence is limited by environmental factors. A teacher with a high sense of teacher self-efficacy would be more likely to create dynamic, student-centered learning environments where students take ownership of their learning whereas a teacher with a low sense of teacher self-efficacy would devote more time to non-academic, managerial tasks (Bandura, 1997). Raudenbush, Rowan, and Cheong (1992) considered teacher self-efficacy to be contextually situated, varying from class to class or by student ability level.

Knobloch (2001) reported that early field experiences and teaching peers influenced teacher candidates' sense of teacher self-efficacy. The researcher suggested that students become more efficacious about their teaching because they observed and experienced teaching in real settings, and had taught their peers. Knobloch and Whittington (2003b) studied the self-efficacy of student, first-, second-, and third-year teachers after the first ten weeks of school. Student teachers were the only group that experienced an increase in self-efficacy during the first ten week period while first-year teachers experienced the greatest decline.

Career commitment is a factor that is related to teacher self-efficacy (Knobloch & Whittington 2003a), in addition to contract length, the number of students, and years of teaching experience (Wheeler & Knobloch, 2006). Career commitment was positively related to teacher self-efficacy, while contract

length and years of teaching were both negatively associated with teacher self-efficacy. However, in another study, Whittington, McConnell, and Knobloch (2006) found no differences in teacher self-efficacy based on the participant's years of teaching experience. Forty-two teacher characteristics were examined; however, only two of the variables accounted for a significant portion of the explained variance (33%) in the teacher self-efficacy score, the quality of the student teaching experience, and the number of class preparations.

Roberts, Harlin, & Ricketts (2006) assessed teacher self-efficacy of student teachers at four different points during a 15-week student teaching experience. The researchers examined the three domains (*student engagement*, *instructional strategies*, and *classroom management*) identified by Tschannen-Moran and Woolfolk Hoy (2001). In the *student engagement* domain, students' scores dropped in the middle of the experience and were highest at the end of the experience. The *instructional strategies* domain exhibited a similar pattern. The changes were less pronounced in the *classroom management* domain but followed the same pattern as the other two domains. The researchers observed that "... limited knowledge exists about teaching efficacy of preservice agricultural science teachers, largely due to the paucity of research in this area. Existing research has largely been conducted by just a few researchers, in only a few states" (Roberts, et al., 2006, p. 84). This view was corroborated by a later study that measured teacher self-efficacy of agricultural education teacher candidates at four institutions (Harlin, Roberts, Briers, Mowen, & Edgar, 2007). The candidates studied exhibited the same pattern of change in their teacher self-efficacy, with a drop in scores toward the middle of the experience, and increased scores at the end. Roberts, Mowen, Edgar, Harlin, and Briers (2007) found a negligible relationship between teacher self-efficacy and personality type, supporting Bandura's (1994) assertion that efficacy is a result of experiences rather than based on personality type.

Knobloch (2006) found that student teachers at two different institutions reported similarly high levels of teaching self-efficacy; however, they differed in their perception of

environmental factors that contributed to teacher self-efficacy. The environmental factors were: supportive principal behaviors, cooperating teacher competence, and number of class preparations. Knobloch speculated that student teachers may have had an inflated sense of teacher self-efficacy which remained inflated throughout the student teaching experience as a result of support from the cooperating teacher.

Rocca and Washburn (2006) investigated differences in self-efficacy between traditionally and alternatively certified teachers. The two groups did not differ in their perceived self-efficacy; however, alternatively certified teachers were about ten years older than traditionally certified teachers. The researchers questioned why the two groups were similar in their level of self-efficacy since the alternatively certified teachers did not have formal training in education. However, they did not question the age difference of the two groups, nor did they attribute the results to the age difference of the alternatively certified teachers.

In a study of student teachers, Wolf, Birkenholz, and Foster (2007) sought to describe agricultural education teacher candidates' sense of teacher self-efficacy in classroom management. The researchers found that student teachers were the most efficacious in the *classroom management and discipline domain*, slightly less efficacious in the *personal teaching efficacy domain*, and least efficacious in the *external influences domain*. Only one leadership characteristic (participation in the Boy/Girl Scouts) explained a significant portion of the variance in the *classroom management and discipline domain* of teacher self-efficacy. The researchers concluded that teacher self-efficacy was not influenced by prior leadership experiences of teacher candidates, and other factors may have contributed to and affected teacher self-efficacy during the student teaching internship.

Duncan and Ricketts (2008) postulated that the research on teacher self-efficacy in agricultural education was limited to general pedagogical topics; therefore, a more specific measure was needed to describe the teacher self-efficacy of secondary agricultural educators accurately. The researchers utilized a modified Borich needs assessment model using the following variables: technical agriculture content, FFA/leadership development/SAE,

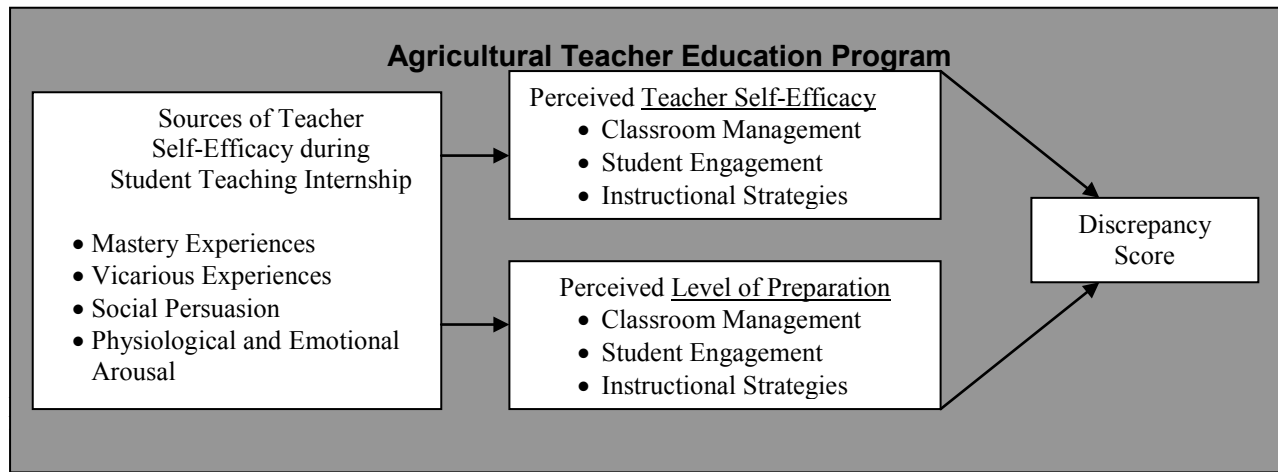


Figure 1. Conceptual framework of agricultural education teacher candidate teacher self-efficacy.

Purpose/Objectives

The purpose of this study was to examine the relationship between the professional experiences of agricultural education teacher candidates during their internship, their sense of teacher self-efficacy, and their perceptions of their preparation.

1. Describe agricultural education teacher candidate perceptions of their teacher self-efficacy at the conclusion of their student teaching internship.
2. Describe agricultural education teacher candidate perceptions of their preparation.
3. Determine the discrepancy between agricultural education teacher candidates' perceived sense of teacher self-efficacy and level of preparation.
4. Describe the type and scope of professional activities of agricultural education teacher candidates during their student teaching internship.
5. Describe the relationship between the professional activities of agricultural education teacher candidates' during student teaching and their sense of teacher self-efficacy.

Methods

The population for this descriptive study was comprised of the entire cohort ($N = 24$) of agricultural education student teacher candidates at The Ohio State University who completed their student teaching internship during Autumn Quarter, 2007. The population frame was

identified by the faculty coordinator of the student teaching internship.

The researchers utilized the *Teacher Sense of Efficacy Scale* [TSES] (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998; Tschannen-Moran & Woolfolk Hoy, 2001) to assess the perceived teacher self-efficacy of agricultural education student teacher candidates. This study utilized the long summated rating scale (24 items) consisting of three distinct domains: *efficacy for instructional strategies* (8 items), *efficacy for classroom management* (8 items), and *efficacy for student engagement* (8 items). The published reliabilities for each domain were 0.91, 0.90, and 0.87, respectively. Items were added to assess candidates' perceptions of their preparation in the items on the TSES, similar to the Borich (1980) needs assessment model. The efficacy items asked teacher candidates to rate their level of capability on each item using the following scale: 1 = None, 3 = Very little, 5 = Some, 7 = Quite a bit, and 9 = A great deal. The preparation items asked teacher candidates to rate their level of preparation on the following scale: 1 = Not prepared, 3 = Slightly prepared, 5 = Fairly well prepared, 7 = Well prepared, and 9 = Very well prepared. Discrepancy scores were calculated for each of the three domains (*efficacy for instructional strategies*, *efficacy for classroom management*, and *efficacy for student engagement*) by subtracting the mean preparation score from the mean teacher self-efficacy score.

Demographic questions were added to the instrument to quantify professional activities during the student teaching internship and categorized according to three of Bandura's

(1994) four sources of self-efficacy: mastery experiences, vicarious experiences, and social persuasion. Physiological and emotional arousal was not assessed in this study as it is a construct that does not lend itself to measurement on a survey instrument. Professional development experiences included a list of assignments and typical roles/responsibilities of student teachers in agricultural education. Candidates were asked to report their level of involvement in each experience. The instrument was reviewed by a panel of experts to address face and content validity. Twenty-four students (100%) completed the survey instrument during an on-campus course after completing their student teaching internship. Descriptive statistic and Pearson product-moment correlation coefficient were used to address the research questions. Davis's (1971) conventions were used to describe the relationship between the variables.

Findings/Results

The population consisted of 24 agricultural education teacher candidates. Two-thirds of the respondents were female and one-third were male. The candidates were 21 to 26 years of age.

The first research objective was to describe agricultural education teacher candidates' sense of teacher self-efficacy in three domains (*efficacy for instructional strategies, efficacy for classroom management, and efficacy for student engagement*) at the conclusion of their student teaching internship (see Table 1). The summated mean of the candidates' perceptions of overall teacher self-efficacy at the end of their clinical experience was 7.30 (on a nine point summated rating scale). The lowest summated mean score of 7.14 was in the *student engagement* domain. The highest summated mean score ($\mu = 7.38$) was in the *classroom management* domain, although it was nearly equal to the *instructional strategies* domain.

Table 1
Teacher Candidate (N=24) Perceptions of Teacher Self-Efficacy and Level of Preparation in Three Domains of Teacher Self-Efficacy.

Domain	Perceptions of teacher self-efficacy		Level of preparation		Discrepancy score
	μ^a	Σ	μ^b	σ	
Student engagement	7.14	1.05	6.22	1.02	0.92
Classroom management	7.38	1.11	6.72	1.25	0.66
Instructional strategies	7.37	1.00	6.72	1.06	0.65
Overall	7.30	0.99	6.55	1.04	0.75

^a 1 = None to 9 = A Great Deal

^b 1 = Not Prepared to 9 = Very Well Prepared

The second research objective was to describe agricultural education teacher candidates' perceptions of their preparation in the three domains of teacher self-efficacy. As indicated in Table 1, the lowest summated mean score of 6.22 was in the *student engagement* domain. The highest summated mean score of 6.72 was computed for both the *classroom management* and *instructional strategies* domains.

The third research objective was to determine the discrepancy between agricultural education teacher candidate teacher self-efficacy scores and their perceived preparation scores. The discrepancy score between the summated

overall mean of the teacher self-efficacy scores and the summated overall mean of the level of preparation scores was 0.75. The largest discrepancy score was in the Student Engagement domain. This domain also produced the lowest summated mean ($\mu = 7.14$) of the three domains of teacher self-efficacy and the lowest level of preparation score ($\mu = 6.22$) compared to the other two domains.

The fourth research objective was to describe the type and scope of professional activities of agricultural education teacher candidates during their student teacher internship categorized according to three of Bandura's (1994) four sources of self-efficacy. Table 2 reports the range

and variability associated with student teacher involvement in each activity. Activities with the greatest variability included the number of class periods observing cooperating teachers and the

percent of time students received verbal feedback from cooperating teachers on classroom instruction.

Table 2
Professional Experiences by Source of Self-Efficacy

Source of Teacher Self-Efficacy	Min ^a	Max ^a	μ	σ
<i>Mastery Experiences</i>				
Number of different courses involved in teaching	2.0	7.0	3.9	1.3
Maximum course load at any one time	3.0	7.0	5.0	1.4
<i>Vicarious Experiences</i>				
Class periods observing cooperating teacher(s)	2.0	170.0	32.0	40.2
Class periods observing another agriculture teacher (not cooperating teacher)	0.0	35.0	3.4	7.9
Class periods observing a first year agriculture teacher	0.0	8.0	2.2	1.9
Class periods observing another student teacher	1.0	8.0	2.4	1.9
Class periods observing a non-agriculture teacher (Grade 6 & below)	0.0	5.0	0.9	1.1
Class periods observing a non-agriculture teacher (Grade 7 & above)	0.0	5.0	2.1	1.2
<i>Social Persuasion</i>				
Number of times received written feedback received from cooperating teacher	0.0	10.0	3.2	3.4
Percent of time received verbal feedback from cooperating teacher	2.00	100.0	63.7	33.9
Class periods observed by another student teacher	0.0	7.0	1.4	2.0

^aMeasurement units are referenced in each stem statement (e.g. courses, periods, etc.).

The fifth research objective was to describe the relationship between the professional activities of agricultural education teacher candidates and their sense of teacher self-efficacy. These data are presented in Table 3. The mastery experience item *number of different courses involved in teaching* had the strongest negative relationship with the domain of classroom management ($r^2 = -.05$). Only five percent of the variance in classroom management was explained by the number of courses the candidates taught. No other relationship of notable strength was observed between other mastery experiences and teacher self-efficacy, although all of the mastery experiences were negatively related to teacher self-efficacy.

Most of the vicarious experiences had a positive relationship with teacher self-efficacy. The strongest positive relationship was between the number of class periods the candidates spent observing a first-year agriculture teacher ($r^2 = .14$) and the domain of instructional strategies; therefore, 14 percent of the variance in the instructional strategies domain was explained by

the candidates' observations of a first-year teacher. Also, observing a first-year agriculture teacher ($r^2 = .11$) explained 11 percent of the variance in the overall teacher self-efficacy score. Observing a non-agriculture teacher (grades 6 and below) explained 12 percent ($r^2 = .12$) of the variance in the classroom management domain, and 10 percent of the variance in overall teacher self-efficacy. Observing another student teacher ($r^2 = .10$) explained 10 percent of the variance in the student engagement domain and 10 percent of the variance in overall teacher self-efficacy.

The strongest relationship between professional development experiences categorized under social persuasion was the percent of time the candidate received verbal feedback and the domain of instructional strategies ($r^2 = .10$), explaining ten percent of the variance. The variable of verbal feedback was the only notable relationship of the social persuasion experiences, explaining ten percent of the variance in overall teacher self-efficacy.

Table 3
Relationship Between Professional Experiences and Teacher Self-Efficacy.

Source of Teacher Self-Efficacy	Teacher Self-Efficacy			
	CM ρ (r^2)	SE ρ (r^2)	IS ρ (r^2)	TSE ρ (r^2)
<i>Mastery Experiences</i>				
Number of different courses involved in teaching	-.22 (.05)	-.2 (.04)	-.08 (.00)	-.18 (.03)
Maximum course load at any one time	-.03 (.00)	-.05 (.00)	-.03 (.00)	-.04 (.00)
<i>Vicarious Experiences</i>				
Class periods observing cooperating teacher(s)	.08 (.01)	.16 (.03)	.06 (.00)	.10 (.01)
Class periods observing another agriculture teacher (not cooperating teacher)	.1 (.01)	.17 (.03)	.04 (.00)	.11 (.01)
Class periods observing a first year agriculture teacher	.27 (.07)	.3 (.09)	.37 (.14)	.33 (.11)
Class periods observing another student teacher	.27 (.07)	.32 (.10)	.31 (.10)	.32 (.10)
Class periods observing a non-agriculture teacher (Grade 6 and below)	.35 (.12)	.33 (.10)	.19 (.04)	.31 (.10)
Class periods observing a non-agriculture teacher (Grade 7 and above)	-.00 (.00)	.16 (.03)	.12 (.01)	.1 (.01)
<i>Social Persuasion</i>				
Number of times received written feedback received from cooperating teacher	.08 (.01)	.06 (.00)	.09 (.01)	.08 (.01)
Percent of time received verbal feedback from cooperating teacher	.29 (.08)	.27 (.07)	.32 (.10)	.31 (.10)
Class periods observed by another student teacher	.08 (.01)	-.07 (.00)	-.01 (.00)	.00 (.00)

Note. CM- Classroom Management; SE- Student Engagement; IS- Instructional Strategies; TSE- Teacher Self-Efficacy

Conclusions/Recommendations/Implications

The purpose of this study was to examine the relationship between the professional experiences of agricultural education teacher candidates during their internship, their sense of teacher self-efficacy and their perceptions of their preparation. The concept of teacher self-efficacy involves the individual's teacher's belief that their performance has the potential to influence the ultimate level of achievement realized by their students. Teacher candidates in this study were most efficacious about classroom management, slightly less efficacious about instructional strategies, and the least efficacious about student engagement. Based on these findings, the candidates in this study perceived that they were able to influence student achievement in their program.

Teacher candidates' perceptions of their level of preparation were also assessed in this study. Candidates reported favorable views of

their preparation, although their perception of the level of preparation was lower than their perceived sense of teacher self-efficacy. Teacher candidates reported the lowest levels of preparation in the student engagement domain and higher levels of preparation in the instructional strategies and classroom management domains; the latter two being nearly equal. Since the level of preparation scores and the teacher self-efficacy scores of the teacher candidates paralleled one another, the researchers concluded that the preparation of agricultural education teacher candidates coincided with their sense of teacher self-efficacy.

In addition to identifying candidate perceptions of teacher-self efficacy and the level of their preparation, this study also examined the discrepancy between the two variables. The largest discrepancy score was in the student engagement domain while the classroom management and instructional strategies domain

discrepancy scores were nearly equal. In all three domains, it was interesting to note that the level of preparation mirrored the candidates teaching self-efficacy scores. However, for the student engagement domain, a lower level of preparation score contributed to a larger discrepancy score.

Agricultural education teacher candidates in this study engaged in professional activities to varying levels during their student teaching internship. The experiences were categorized into three of Bandura's (1994) four sources of self-efficacy: mastery experiences, vicarious experiences, and social persuasion. Professional activities exhibiting the greatest variability were the number of class periods that candidates spent observed their cooperating teacher and the percent of time they received verbal feedback from their cooperating teacher on their classroom instruction.

One objective of this study was to describe the relationship between activities that candidates engaged in during their student teaching internship and their sense of teacher self-efficacy. The strongest positive relationship was between the instructional strategies domain and observing a first-year agriculture teacher (vicarious experience). Three vicarious experiences exhibited moderate (Davis, 1971) positive relationships with overall teacher self-efficacy: observing a first year agriculture teacher, observing another student teacher, and observing a non-agriculture teacher (grade 6 and below). However, observing a cooperating teacher and observing another agriculture teacher (not a first year agriculture teacher) reflected a negligible relationship with teacher self-efficacy. The researchers concluded that student teacher candidates may view experienced teachers as more capable and therefore somewhat intimidating whereas the student teacher candidates may have related more closely to novice teachers and peers in their student teaching cohort group.

Bandura (1994) noted that it was essential for an individual modeling a behavior to ensure that the level of performance is reachable by the observer. The researchers speculate that the level of performance candidates observed in first-year teachers, their peers, and non-agriculture teachers may have been more attainable and, therefore, may have positively affected their teacher self-efficacy. The professional

development experience of observing non-agriculture teachers (grade 6 and below) had a lower relationship with the instructional strategies domain compared to the other two domains and overall teacher self-efficacy. The researchers speculate that candidates did not relate as well to the instructional strategies used by elementary teachers; therefore, this experience did not affect the domain of instructional strategies. However, candidates seemed to benefit in the classroom management and student engagement domains as a result of observing elementary school teachers.

It was interesting to note that each of the professional experiences categorized as mastery experiences had negative relationships with all three domains of teacher self-efficacy. The strongest negative relationship was between the number of courses a candidate was involved in teaching and the classroom management domain. This may indicate that candidates may have been teaching too many courses at one time to develop a sense of teacher-efficacy about their classroom management performance. Bandura (1994) regarded mastery experiences as the most important source of self-efficacy; however the results of this study indicate that there may be a point of diminishing returns of teacher self-efficacy if candidates are involved in teaching too many courses.

The type of feedback that candidates receive may also be an important factor in their level of teacher self-efficacy. Written feedback from the cooperating teacher was not related to teacher self-efficacy. This finding supports Edgar, Roberts, & Murphy's (2009) finding that structured communication did not create a change in student teachers sense of efficacy. However, verbal feedback from the cooperating teacher had a moderate positive relationship to the candidates teacher self-efficacy score in the instructional strategies domain and overall teacher self-efficacy. This feedback may enable teacher candidates to refine and improve their instructional strategies, thereby increasing their sense of self-efficacy. Written feedback that cooperating teachers are asked to complete for the teacher preparation program is structured and on a standardized form and therefore may not be as pertinent to the candidates. Verbal feedback may be more immediate and less formal than written feedback, and therefore

more likely to impact the candidates' sense of teacher self-efficacy.

The researchers recommend more verbal feedback from cooperating teachers during the student teaching internship at the institution where the research was conducted. Candidates should also observe a variety of other teachers and classes, especially elementary classrooms. Cooperating teachers should also exercise caution to avoid overloading teacher candidates with too many classes which may result in situations where candidates are not able to succeed, thereby affecting their sense of teacher self-efficacy. It would be more beneficial to ensure that candidates are successful in one class before adding another course assignment to their teaching load. Candidates should be encouraged to observe other teachers performing at a level that is attainable by candidates, rather than at levels unattainable by the candidates.

The findings presented in this study raise many questions relative to teacher self-efficacy.

Does early teaching experience help build efficacy, and to what degree? Do particular assignments help build efficacy? Are there experiences during the student teaching internship that were not measured in this study that affect teacher self-efficacy? Why are student teachers the least efficacious in the student engagement domain? How should the student teaching internship be structured to build efficacy?

Additional research is needed in the area of teacher self-efficacy in agricultural education to identify professional experiences that improve teacher self-efficacy. Induction year teacher programs should also be examined to ascertain the effects on teacher self-efficacy. Teacher educators and professional development personnel need this information to better understand teacher self-efficacy in order to prepare and retain more and better teachers in secondary agricultural education programs.

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