

TEACHER LOCUS OF CONTROL AND TEACHER
SELF-EFFICACY OF AGRICULTURAL
EDUCATORS IN SOUTHEAST MISSOURI

By

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Abstract: This study sought to describe the self-efficacy, locus of control (LOC), sex, age, teaching experience, and number of teaching partners of school-based agricultural educators (SBAE) in Southeast Missouri and the relationships between those variables. A census of teachers in the district was conducted using the Teacher Self-Efficacy Scale and Teacher Locus of Control Scale during district Career Development Event competitions. Descriptive and inferential statistical tests were used to analyze data. The average SBAE teacher in Southeast Missouri is male, 38 years old, has taught for 12 years, is in a single teacher program, has a high teacher self-efficacy, and external teacher locus of control beliefs. Although self-efficacy was not found to hold statistically significant correlations with LOC, relationships with age and experience level were statistically significant. The SBAE teachers' LOC differed based on their age, experience level, and program type. Male and females were found to be statistically significantly different in age, experience, and number of co-teachers. A relationship was found between the SBAE teachers' age and each of the research variables. No other relationships were deemed statistically significant. In Southeast Missouri, as male SBAE teachers in single programs age and gain experience, they gain self-efficacy and become more external in LOC. To improve self-efficacy of younger teachers, SBAE leaders in Southeast Missouri should create a coaching and mentoring program to follow Bandura's modeling social learning theory. Researchers should develop an instrument to assess the LOC of SBAE teachers and compare the data across populations. Additional research is necessary in agricultural education literature to understand fully these results.

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CHAPTER I

INTRODUCTION

The dichotomy between control of one's own destiny versus a fate dictated by circumstances impacts motivation and decision making (Nowicki, 2016). For years, social scientists have been fascinated by the role of cognition in motivating behaviors (Bandura, 1977; Rotter, 1966). Motivation is a complex personality trait that is commonly divided into two sources, intrinsic and extrinsic. Extrinsic motivators occur outside the individual (i.e. salary, awards, recognition, and fear of punishment) while intrinsic motivation originates internally and brings a sense of pleasure for the completion of the task (Han & Yin, 2016). Extrinsic motivation has been found to be effective over the short term while intrinsic motivators are more effectual in the long run (Deniz, Tras, & Aydogan, 2009). Motivation plays a vital role in teaching and learning (Halpin, Harris, & Halpin, 1985). Teacher motivation has been the source of a multitude of research and is correlated closely with teaching effectiveness and student motivation (Han & Yin, 2016). Teacher motivation is affected by various school climate factors and personality traits (Halpin et al., 1985). In education, personal traits of teachers, such as self-efficacy and locus of control (LOC), are especially poignant for their impact on students (Demirkasimoglu, Aydin, Erdogan, & Akin, 2011; McKim & Velez, 2016).

Self-efficacy is “an individual’s belief about what he or she can do successfully”

(Veldmann, Admiraal, Mainhard, Wubbels, & van Tartwijk, 2017, p. 412). This belief system interacts with environmental feedback to play a major role in motivation and performance (Bandura, 1993). When individuals are confident in their abilities to execute behaviors vital to contextual success, they are more likely to persevere in the face of hardships and outperform those with lower self-efficacy (Bandura, 1977).

Teacher self-efficacy, or the belief of teachers in their ability to perform teaching tasks necessary in specific educational contexts, has been shown to possess a correlation with commitment to teaching, effective teaching performance, and stress levels (Aziz & Quraishi, 2017; McKim, Sorensen, Velez, & Henderson, 2017; Senler, 2016). Several demographic variables, such as age, teaching experience, and educational level, can influence teacher self-efficacy (Aziz & Quraishi, 2017; McKim et al., 2017; Veldman et al., 2017). Sex may influence the self-efficacy of teachers and other gender stereotyped professions (Anderson, Greene, & Loewen, 1988). According to Bandura (1977; 1993), contextual self-efficacy can change with age and experience. Swortzel (1996) found teacher self-efficacy differences in program types of school-based agricultural education (SBAE) teachers.

LOC determines where a person places the responsibility of success and failure (Rotter, 1966). People with an internal LOC believe they have a direct influence on the consequences of their efforts and tend to be high achievers both academically and professionally (Akca, 2013). Individuals with an external LOC view consequences as the result of outside forces and tend to have more behavioral problems, earn less money, rely more on external motivators, and suffer from more health issues than their internal LOC counterparts (Ng-Knight & Schoon, 2017).

Teacher LOC, or the personal responsibility a teacher feels for educational outcomes (Rose & Medway, 1981), has been correlated with various demographic factors and teacher traits (McCormick & Barnett, 2007). Sex, career stage, and age have shown a relationship with teacher LOC (McCormick & Barnett, 2007). Richardson (1987) found differences in teacher LOC in male and female teachers as well as older and younger teachers. Teachers across career stages have shown differences in internal and external LOC beliefs (Demirkasimoglu et al., 2012). LOC affects working relationships between coworkers in educational settings (Nowicki, 2016)

Problem

Agricultural education has a rich history and strong foothold in Missouri (Missouri Department of Elementary and Secondary Education, 2013). The state boasts a strong agricultural industry of diversified products (National Agricultural Statistics Service, 2017). The southeast corner of the state is unique in economical, meteorological, and agricultural characteristics from the rest of the state (Secretary of State, 2018). The region is highly dependent on the production of soybeans, corn, wheat, cotton, milo, and rice as main sources of income (National Agricultural Statistics Service, 2017). This agricultural economy struggles to adequately provide for all populations (Secretary of State, 2018). According to the Missouri Census Data Center, in 2013, seven of Missouri's 12 poorest counties sit within the boundaries of the Southeast District.

Agricultural education is particularly important in this agriculturally dependent section of the state (Missouri Department of Elementary and Secondary Education, 2013). Even so, Southeast Missouri SBAE programs are commonly outperformed in state events (Missouri FFA 2018a; 2018b; 2018c). In 2018, Southeast Missouri was not

represented by first and second place proficiency award state winners in 48 different categories (Missouri FFA, 2018b). Only three Southeast Missouri SBAE students were recognized on stage at the 2018 Missouri State FFA Convention for their efforts in Career and Leadership Development Events in 27 contests (Missouri FFA, 2018a). Southeast Missouri SBAE students represented a mere 59 (5.78%) of applications for the Missouri State FFA Degree in 2018 (Missouri FFA, 2018c). Interestingly, references to Southeast Missouri are nearly invisible in agricultural education literature. In 59 volumes, the *Journal of Agricultural Education* has published 22 studies focusing solely on various issues of Missouri SBAE. None of these studies identified the Southeast district as a separate entity. Therefore, there is a gap in knowledge of this region.

Teacher self-efficacy is a vital component in educational outcomes for students and teachers (McKim & Velez, 2016). Agricultural education is a vast and diverse field (Missouri Department of Elementary and Secondary Education, 2013). To promote quality agricultural programs, teachers need to be self-efficacious in all areas of the three circle model (McKim et al., 2017). Teacher LOC can impact a teacher's commitment to their profession (Akca, 2013) and may influence student achievement (Murray & Staebler, 1974). These important components to teacher motivation (Han & Yin, 2016) and the unique district of Southeast Missouri are profitable areas of research.

Purpose

The purpose of this study was to analyze Southeast Missouri SBAE teachers' self-efficacy and locus of control. Relationships between Southeast Missouri SBAE teacher self-efficacy, teacher LOC, and demographic data were examined to assess if there was a

connection between teacher self-efficacy, teacher LOC, sex, age, years of teaching experience, and single/multi teacher programs.

Research Objectives

1. Describe the selected personal and professional characteristics of SBAE teachers in the Missouri Vocational Agricultural Teacher Association Southeast District including sex, age, years of teaching experience, and employment in single versus multiple teacher programs.
2. Assess the teacher self-efficacy of SBAE teachers in the Missouri Vocational Agricultural Teacher Association Southeast District.
3. Determine teacher locus of control for SBAE teachers in the Missouri Vocational Agricultural Teacher Association Southeast District.
4. Examine relationships between teacher self-efficacy, teacher locus of control, sex, age, years of teaching experience, and employment in single versus multiple teacher programs of SBAE teachers in the Missouri Vocational Agricultural Teacher Association Southeast District.

Significance

By achieving these objectives, this study will add to the knowledge base needed to answer the first research question in Priority Five of the National Research Agenda from American Association of Agricultural Educators which asks, “What evaluation methods, models, and practices are effective in determining the impacts of educational programs in agriculture and natural resources?” (Thoron, Myers, & Barrick, 2016).

Scope

The target population ($N = 52$) included the school-based agricultural education (SBAE) teachers of Southeast Missouri (Missouri Department of Elementary and Secondary Education, 2013). Data were collected at Career Development Event contests in April 2018.

Assumptions

The following assumptions should be considered when consuming the results of this study.

1. Participants completed the instrument truthfully.
2. Participants considered each instrument item to the best of their ability.

Limitations

These limitations have been identified in the present study.

1. Due to the uniqueness of the subjects, caution should be taken generalizing findings beyond the subject.
2. Data were collected at district Career Development Event contests and may reflect confounding variables such as time constraint stress.

Definition of Terms

The following definitions will be utilized throughout the study to address the main variables of interest.

1. Novice teacher: A SBAE teacher who has taught for five or less years (Aziz & Quraishi, 2017).
2. Experienced teacher: A SBAE teacher who has taught for six or more years (Aziz & Quraishi, 2017).

3. Single teacher department: School district employing only one SBAE teacher (Swortzel, 1996).
4. Multiple teacher department: School district employing at least two SBAE teachers (Swortzel, 1996).
5. Self-efficacy: “An individual’s belief about what he or she can do successfully” (Veldman et al., 2017, p. 2017)
6. Teacher self-efficacy: “A judgement of his or her capabilities to bring about desired outcomes of student engagement and learning, even among those students who may be difficult or unmotivated” (Tschannen-Moran & Hoy, 2001, p. 783).
7. Locus of control: “Individual’s generalized belief (expectancy) about the extent to which personal outcomes are contingent upon personal characteristics or behaviors” (McCormick & Barnett, 2007, pp. 9-10).
8. Internal locus of control: “Person perceives that the event is contingent upon his own behavior” (Rotter, 1966, p. 1).
9. External locus of control: “Reinforcement is perceived by the subject as following some action of his own but not being entirely contingent upon his action” (Rotter, 1966, p. 1).
10. Teacher locus of control: “Teachers’ perceptions of personal control over or responsibility for student achievement-in short, whether teachers see themselves as capable or incapable of influencing the achievement of their students” (Rose & Medway, 1981, p. 185).

11. Internal teacher locus of control: Belief “he/she is influential in the classroom, accepts the responsibility for his/her actions and works hard to achieve educational goals” (Halpin et al., 1985, p. 139).

12. External teacher locus of control: Belief “he/she has little control over planning, ability, or effort but instead attributes educational outcomes to luck, fate, and chance” (Halpin et al., 1985, p.139).

CHAPTER II

REVIEW OF LITERATURE

This chapter is a review of the literature associated with the topic and primary variables of this study. The review addresses general concepts of social learning theory, self-efficacy, and locus of control. Literature focused more narrowly on how self-efficacy and locus of control apply to teachers and impact teacher performance is also included in this review.

Social Learning Theory

Before social learning theory, Freud's psychoanalysis and Skinner's behaviorism were the extreme ends of a continuum seeking to understand behavior motivations (Grusec, 1992). Psychoanalysts believe complex human behavior can be explained by the interaction of the id, ego, and superego to satisfy conscious and unconscious needs and desires based purely on cognitive processes (Woolfolk, 2007). Psychoanalysis explains behavior as motivated by the desire for the greatest pleasure with the least amount of pain (Grusec, 1992). On the other end of the continuum lie the behaviorists. Behaviorism theorists, including Skinner and Pavlov, propose much about human behavior can be explained with classical and operant conditioning (Grusec, 1992). Classical conditioning theorizes behavior is shaped by stimuli and responses while operant conditioning studies the impact of rewards and punishments on behavior frequencies (Woolfolk, 2017).

Behaviorists propose individuals build their habits based on environmental stimuli and previous direct feedback (Grusec, 1992).

In the 1930s, theorists began to search for more moderate explanations of behavioral motivations (Grusec, 1992). Miller and Dollard were among the first to redefine psychoanalysis within classical and operant conditioning by theorizing learning occurs through direct observation and behavior imitation (McLeod, Carter, Nowicki, Tottenham, Wainwright, & Wyner, 2015). The idea learning can occur through vicarious as well as direct experiences formed the foundation of social learning theory (Woolfolk, 2007). Early theorists began to form social learning into a unique theory to explain behavior motivations using both internal and external forces of cognitive and behaviorist theories and treating the learner as an active participant in the learning process (Mearns, 2017).

Rotter focused on cognition in the formation of behavioral motivations (Grusec, 1992). He theorized, “personality represents an interaction of the individual with his or her environment” (Mearns, 2017, p. 3). Beginning to focus on the implications of expectancy on behavior, Rotter created a formula, $BP = f(E \& RV)$, to depict the interconnectedness between outcomes (RV), expectations (E), and future behavior (BP) (Rotter, 1966). He suggested that, “human behavior can be predicted by two general factors, (1) the expectancies people have that if they behave in a certain way they will be rewarded and (2) how much they value the reward they are attempting to acquire” (McLeod et al., 2015, p. 31). This formula eventually blossomed into his most notable work of LOC (Rotter, 1966).

As Rotter was conceptualizing LOC, Bandura was constructing his own social learning theory (Grusec, 1992). Throughout a long and productive career, the most famous social learning theorist contributed no less than three major concepts to the body of research (McLeod, 2016). One of Bandura's first investigations in social learning theory focused on learning with the use of models in his famous Bobo doll experiments (Kelland, 2015). Bandura theorized people learn from watching and imitating others (Bandura, 1962). The four-step modeling process proposes learning occurs in the social environment through attention, retention, reproduction, and motivation (Woolfolk, 2007). People observe a model, often a parent, peer, or teacher, retain the applicable information, and exhibit similar behavior in related circumstances (McLeod, 2016). These models can be in-person, a verbal representation, or symbolic through mass media (Grusec, 1992). Distractions and inability to store or recall knowledge will disrupt the modeling process (Woolfolk, 2007). They are motivated to repeat the behavior based on the rewards or consequences they observe or experience (Rotter, 1966). The perceived rewards will increase the frequency of similar behaviors while a negative consequence will dissuade repeated performances (McLeod, 2016). These encounters further engrain a belief in appropriate actions for a given context (Tully et al., 2016).

Bandura later considered a holistic approach to social learning theory by including the cognitive, behavioral, and environmental factors to human behavior (Miller, 2018). The reciprocal determinism of Figure 1 considers the impact of an individual on their environment and the environment on the individual (Kelland, 2015). Bandura (1977) theorized human behaviors cannot be fully understood outside of their context but

cognitive, sometimes referred to as personal, behavioral, and environmental factors are intertwined and interdependent in influencing future behavior (Kelland, 2015).

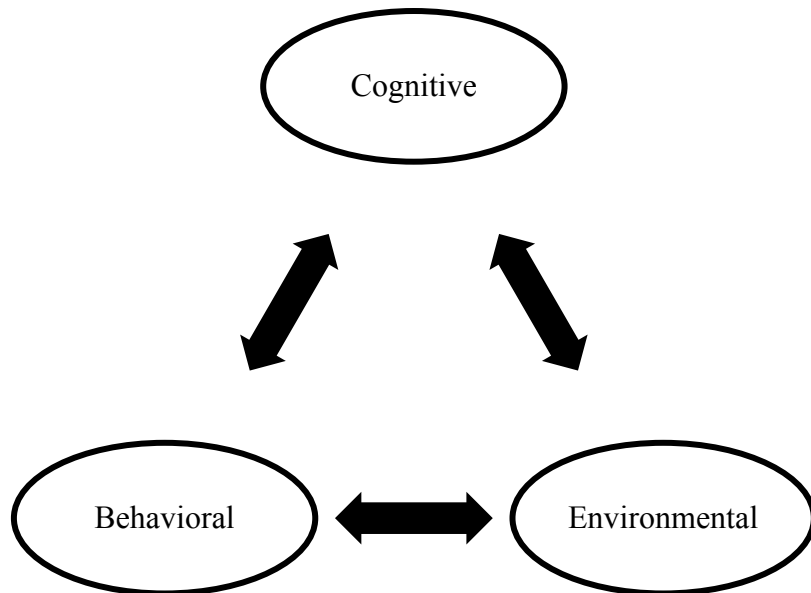


Figure 1. Model of Reciprocal Determinism.

Some of Bandura’s more recent work concerns motivational factors. Bandura borrowed from the psychoanalysis concept that humans are driven toward the greatest payoff with the least effort and Rotter’s perception of ability to affect outcomes to build his own ideas of behavioral motivations (Grusec, 1992). He theorized an individual’s perception of his or her ability to perform well in a given context held great sway over that person’s actions in that environment (Bandura, 1977; Bandura, 1993). This concept of self-efficacy has shown to be a reliable indicator of future behavior and performance (Bandura, 1993).

Self-efficacy and LOC are rooted in social learning theory (Bandura, 1977; Rotter, 1966) Both traits are learned in early childhood through parental models (Moreland, Felton, Hanson, Jackson, & Dumas, 2016; Woolfolk, 2007). Self-efficacy can be gained through vicarious experiences and form beliefs in the source of success or

failure of personal efforts (Woolfolk, 2007). The most important influence on children's LOC is parents' LOC (Carton, Nowicki, & Basler, 1996; Moreland et al., 2016). As children grow older, the circle of influence expands to include teachers, peers, and experiences (Nowicki, 2016).

Environmental, personal, and behavioral factors interact to form an individual's self-efficacious and LOC beliefs through reciprocal determinism (Moreland et al., 1996; Nowicki, 2016; Tully et al., 2016). Individuals interact with and receive feedback from their environment, molding beliefs about their abilities and influencing motivation (Bandura, 1977). Self-efficacy plays a major role in cognition, motivation, emotion, and decision making processes as individuals are much more likely to engage in activities when they perceive they have the ability to be successful (Bandura, 1993). Cultural factors also play a part in LOC development (Fei Wu & Dai, 2017). Various socioeconomic factors also can influence LOC development (Ng-Knight & Schoon, 2017). Poverty and low socioeconomic levels backgrounds tend to produce more external LOC individuals than middle and upper classes (Ng-Kight & Schoon, 2017), while community leaders and civil rights activists tend to be internally controlled (Nowicki, 2016).

The expectation a behavior will lead to a given outcome and a person's belief he or she is able to perform that behavior successfully largely influences cognition and behavior motivation (Bandura, 1977). Self-efficacy and LOC hold great impact on behavior motivations and job performance (Bandura, 1993; Nowicki, 2016). Highly self-efficacious persons are persistent achievers (Bandura, 1993). When people believe they possess the skills necessary to produce rewarding outcomes, they are motivated to

perform with more dedication and persistence (Senler, 2016). Medicine, mental health, public and private sectors, and family study disciplines have all explored the impacts of LOC on their field (Nowicki, 2016). Across these diverse applications, LOC was found to affect academic achievement, self-esteem, job satisfaction, and emotional intelligence (Carton et al., 1996).

Self-Efficacy

Veldman et al. (2017) summarized self-efficacy as “an individual’s belief about what he or she can do successfully” (p. 412). As stated above, self-efficacy is formed through both personal and vicarious experiences and feedback (Woolfolk, 2007). Bandura (1993) proposed self-efficacy as the most important agent in personal motivation. Self-efficacy can be just as important, if not more so, than ability in job performance (Abosede & Adesanya, 2017). “Personal accomplishments require not only skills but self-beliefs of efficacy to use them well. Hence, a person with the same knowledge and skills may perform poorly, adequately, or extraordinarily depending on fluctuations in self-efficacy thinking” (Bandura, 1993, p. 119). Tschannen-Moran and Hoy (2001), premier teacher self-efficacy researchers, defined the term as “a judgement of 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. 783). These efficacious beliefs are constructed from a collage of inner voices, vicarious observations, punishments and reinforcers, and social models (Bandura, 1993). Garvis, Twigg, and Pendergast (2011) found observation, feedback, and modeling as the three main factors of art teacher self-efficacy development for novice early childhood educators. In applying their findings to agricultural education, it is simple to see the

importance of coursework, observation of master teachers, and experiential learning throughout the three circle model for preservice agricultural educators (McKim et al. 2017).

Impact on Teacher Performance

Self-efficacious teachers believe they possess the ability to be successful in specific tasks within specific circumstances (Tschannen-Moran & Hoy, 2001). Teachers with high self-efficacy in their profession have been shown to report lower stress rates, less burnout symptoms, higher vocational commitment, and greater student engagement (Veldman et al., 2017). By believing in their ability to influence students in all circumstances, teachers with a strong sense of professional self-efficacy are more effective in producing positive student learning outcomes and handle job related stressors with less negative consequences (Senler, 2016). “Teachers’ beliefs in their personal efficacy to motivate and promote learning affect the types of learning environments they create and the level of academic progress their students achieve” (Bandura, 1993, p. 117). When people believe they possess the qualities needed to be successful, they tend to create positive mental pictures, suffer less from depression and self-doubt, and out-perform those with low self-efficacy (Bandura, 1977; Bandura 1993; McKim & Velez, 2016). On the other hand, those with lower self-efficacy see ability as an inherit quality, tend to constantly compare themselves to others, and report higher levels of stress and anxiety (Bandura, 1993). Teacher self-efficacy is tied to job commitment and teacher retention (Blackburn & Robinson, 2008). Anderson et al. (1988) found students who were taught by teachers with higher self-efficacy at the beginning of the school year scored higher on achievement tests at the close of the year.

Teacher Self-Efficacy in SBAE

SBAE teachers need to be self-efficacious in all areas of the three-circle SBAE model (McKim & Velez, 2016; Swortzel, 1996). Greater self-efficacious SBAE teachers exhibit more positive perceptions in supervising a students' Supervised Agricultural Experience program (Swortzel, 1996). Duncan and Ricketts (2008) found traditionally certified SBAE teachers to be more teacher self-efficacious SAE, FFA, and classroom management than alternatively certified SBAE teachers. Knobloch and Whittington (2002b) claimed feedback and previous SBAE experience to be the greatest influences of beginning SBAE teachers' self-efficacy. Ties to teacher self-efficacy and other personality traits have long been a subject of research (McKim & Velez, 2016; Nafradi, Nakamoto, & Schulz, 2017; Senler, 2017).

Correlations with Sex

The literature has not yet come to consensus in describing the relationship between sex and teacher self-efficacy. In similar procedures, yet differing sample sizes, studies have found vastly differing results regarding the relations of sex and teacher self-efficacy. In 1,283 participants, 674 of which were men, Aziz and Quraishi (2017) found an insignificant difference between male and female teachers' self-efficacy scores. Other studies, however, found sex differences in teacher self-efficacy (Anderson, Greene, & Loewen, 1988; Gungor & Ozdemir, 2017; Karimvand, 2011; Klassen & Chiu, 2010). Karimvand (2011), who studied 180 teachers, 90 male and 90 female in Iran, concurred with the study of 24 Canadian teachers conducted by Anderson, Greene, and Loewen (1988) in finding female teachers more efficacious than males. Aziz and Quraishi (2017) theorized because teaching has historically been a female profession, women may feel

naturally more efficacious than males. Gungor and Ozdemir (2017) and Klassen and Chiu (2010) reported opposing results. Of 108 males in a sample size of 247, Gungor and Ozdemir (2017), discovered male pre-service teachers in various secondary subjects to have statistically higher self-efficacy beliefs. In a larger, though heavily skewed study, Klassen and Chiu (2010) collected results at a local Canadian teacher conference. With less than one-third of the respondents being male, they still found males to have greater teacher self-efficacy (Klassen & Chiu, 2010). The body of literature disagrees on the influence of sex on teacher self-efficacy, if any exists.

Correlations with Age

Unlike sex, research reports harmonious findings in age and teacher self-efficacy. Across sample size and data collection procedures, numerous studies report similar findings concerning the relationship between age and teacher self-efficacy. There appears to be a positive correlation between age and teacher self-efficacy (Gungor & Ozdemir, 2017; Veldman et al., 2017). This trend corroborates Bandura's theory that self-efficacy is formed through countless experiences (1977) and higher self-efficacy leads to greater perseverance (1993). McKim, Sorensen, Velez, and Henderson (2017) recognized this correlation when they connected teacher self-efficacy with commitment to teaching in school-based agricultural educators.

Correlations with Years of Teaching Experience

Teaching experience follows similar trends to age and teacher self-efficacy. Veteran teachers, those with at least six years of experience, tend to report greater teacher self-efficacy than teachers with less time in the profession (Aziz & Quraishi, 2017; Karimvand, 2011; Klassen & Chiu, 2010; Veldman et al., 2017). In addition, Karimvand

(2011) reported teacher self-efficacy increases dramatically after the third year of teaching experience. Klassen and Chiu (2010) categorized participants into beginning, mid, and late career stages. They found teacher self-efficacy increases steadily through the first 23 years of a teacher's career then decreases throughout the latter years of teacher (Klassen & Chiu, 2010). In their analysis of self-efficacy research in agricultural education, McKim and Velez (2016) found several studies following the same trend in school-based agricultural education. They cited studies by Hartfield (2011) and Burris, McLaughlin, McColloch, Brashears, and Frazee (2010) which found experienced agricultural educators hold greater self-efficacious beliefs than novice teachers (McKim & Velez, 2016). The path to certification was also found to correlate with teacher self-efficacy as described by Robinson and Edwards (2012) who discovered traditionally certified SBAE teachers to be more self-efficacious throughout the teaching profession than those alternatively certified. Again, both Bandura (1977; 1993) and McKim et al. (2017) are supported in these trends noticed in the body of research as self-efficacy generally increases with experience and high self-efficacy is correlated with stronger perseverance.

Correlations with Number of Teachers in School-based Agricultural Education Programs

There are far fewer studies researching the relationship between teacher self-efficacy and single and multiple teacher programs. Although there is a clear connection between teaching environment and teacher self-efficacy (Klassen & Chiu, 2010), few studies were found that examined teacher self-efficacy and co-teacher relationships. Swortzel (1996) examined teacher self-efficacy in Supervised Agricultural Experiences

(SAEs). He discovered those who taught in a multiple (at least two) teacher SBAE programs exhibited greater teacher self-efficacy related to SAEs than single teacher SBAE programs. Zartman (2015) studied teacher self-efficacy of pre-service teachers during their student teaching experience. She found co-teaching with another student teacher greatly improved teacher self-efficacy and tied these results to the modeling process of social learning theory. More research is needed to fully understand the difference of teacher self-efficacy in single versus multiple teacher programs throughout the three circle SBAE model (Swortzel, 1996).

Locus of Control

LOC has fascinated researchers for more than 50 years (Carton et al., 1996).

Rotter (1966) defined the locus of control continuum as:

The degree to which the individual perceives that the reward follows from, or is contingent upon, his own behavior or attributes versus the degree to which he feels the reward is controlled by forces outside of himself and may occur independently of his own actions. (p. 1)

In short, “LOC reflects how we have learned to perceive what happens to us” (Nowicki, 2016, chapter 1). LOC strives to describe an individual’s perception of the locale of consequences of efforts (Ng-Knight & Schoon, 2017). A person’s LOC can be generalized into two categories (Rotter, 1966).

Internal LOC individuals, or *internals*, view results as dependent on their own actions and efforts (Barbuto & Story, 2010). They believe success is dependent on hard work and outcomes are largely correlated with their level of effort (Nowicki, 2016).

Internal individuals are self-motivated and self-disciplined and take an active role in their education and employment (Sadioglu, 2017).

In contrast, individuals with an external LOC, or *externals*, see much of what occurs as beyond their control (Nowicki, 2016). They view events as the action of fate or powerful outside forces (Rotter, 1966). Because externals view the outcome as beyond their control, they are passive spectators in life (Barbuto & Story, 2010).

From Rotter's first definition of the term, LOC antecedents, parameters, implications, and correlations with demographics have been analyzed extensively (Barbuto & Story, 2010; Furnham & Cheng, 2016; Stone, 2015; Tsai & Hsieh, 2015). LOC development is a complicated process with numerous intricate players (Rotter, 1966).

The first models for children are their parents (McLeod, 2016). Carton et al. (1996) observed maternal reinforcement in puzzle tasks. These researchers also noticed "an association between internal control expectancies in children and parents who, although being supportive, still allow their children enough autonomy to experience contingencies on their own" (Carton et al., 1996, p. 172). Tully et al. (2016) also found a correlation between parental and child LOC. Sadioglu (2017) concurred the connection between positive parental feedback and internal LOC development in children. These early childhood influences tend to have long-lasting effects on LOC throughout early adolescence and into adulthood (Furnham & Cheng, 2016). The internal or external orientation of LOC impacts various aspects of life (Furnham & Cheng, 2016). LOC has been found to have correlations with academic and job success (Akca, 2013), emotional intelligence (Deniz et al., 2009), life satisfaction (Cobb-Clark & Schurer, 2013), and

demographic variables such as age, sex, and years of experience (Cohen, 2007; McCormick & Barnett, 2008; Richardson, 1987).

Impact on Teacher Performance

Researchers were inspired by Rotter's LOC research and began to study teachers' LOC (Burrell, 1994). As applied to education, teacher LOC can be understood as "teachers' perceptions of personal control over or responsibility for student achievement- in short, whether teachers see themselves as capable or incapable of influencing the achievement of their students" (Rose & Medway, 1981, p. 185). Teachers were observed to have both internal and external causation of their students' behavior and achievement (Cook, 2012). An internally orientated teacher attributes student motivations to teacher actions while an externally orientated teacher believes much of student behavior and performance is outside of his or her control (Burrell, 1994). Halpin, Harris, and Halpin (1985) described the difference as:

The internal teacher, realizing that he/she is influential in the classroom, accepts the responsibility for his/her actions and works hard to achieve educational goals.

The external teacher, on the other hand, feeling that he/she has little control over planning, ability, or effort but instead attributes educational outcomes to luck, fate, and chance. (p. 139)

Rose and Medway (1981) explored positive and negative internal LOC in teachers. They were interested in teachers' beliefs in their role in the successes and failures in the classroom, asking if internally controlled teachers felt responsible for both student achievements and challenges (Rose & Medway, 1981). Additional research has explored implications of teacher LOC. Murray and Staebler (1974) found greater student

achievement in the classrooms of internally controlled teachers while Burrell (1994) found no relationship between teacher LOC and student performance. Internally controlled teachers were less stressed, more committed to their profession, exhibited greater self-regulation and engaged in more student-centered learning activities when compared to their external counterparts (Cook, 2012; Halpin et al., 1985; Toussi & Ghanizadeh, 2012). Teachers with external orientation were much more likely to suffer from burnout symptoms (McIntyre, 1984). LOC was found to account for more differences in preservice teachers' attitudes than sex, age, and content attitudes (Woodrow, 1990).

Teacher LOC in SBAE

A search of the 59 volumes of the *Journal of Agricultural Education* for locus of control would yield no results at the time of this study. However, deductions from the locus of control of agriculturalist may be applied to SBAE teachers. Internal LOC farmers are more likely to implement agricultural technology (Abay, Blalock, & Guush, 2017) and work in a safe manner (Cigularov, Chen, & Stallones, 2009). Since internal LOC teachers are more likely to engage students (Staebler, 1974) and contribute to positive working environments (Cohen, 2007), internal SBAE teachers may be more willing to implement educational technology and maintain safe learning environments. Still, numerous teacher LOC studies have been completed.

Correlations with Sex

Relationships between sex and teacher LOC, like those with teacher self-efficacy, have yet to be defined fully by research. In a study with 62 male and 101 female student teachers, Richardson (1987) found female preservice teachers to be more internally

controlled. Studies by Halpin et al. (1985) and Woodrow (1990) both found no relationship between sex and teacher LOC. The differences in these results may be attributed to sample size and confounding variables, but also may be a sign LOC is a complex attribute that is composed of numerous factors (Nowicki, 2016).

Correlations with Age

Research concerning the relationship between teacher age and LOC also has mixed results. In preservice teachers, some studies have found older student teachers are more likely to be internals (Richardson, 1987). Similar to their results with sex and LOC, Halpin et al. (1985) found no relationship between age and teacher LOC. Some of the first LOC researchers discovered LOC is formed early in life (Moreland et al., 2016). Parents are the main influencers of personal LOC and much of an individual's LOC is set by three years of age (Tully, et al., 2016). Although LOC remains somewhat malleable, it is largely established by early adulthood (Nowicki, 2016; Rotter, 1966). Therefore, a teacher's LOC is mostly in place by the time he or she begin his or her career.

Correlations with Years of Teaching Experience

Though the foundation for LOC is set in early childhood, it remains pliable into adulthood (Cobb-Clark & Schurer, 2013). Therefore, as teachers progress throughout their careers, theoretically, LOC may change (Nowicki, 2016). Support for this theory is found in a study conducted by Demirkasimoglu, Aydin, Erdogan, and Akin (2012). They discovered teachers in mid-career, especially 11 to 15 years of experience, were the most internal. Teacher LOC became more external in later teacher career stages, particularly above 20 years of teaching (Demirkasimoglu et al., 2012). However, other research

shows mixed results. McCormick and Barnett (2008) found no statistically significant differences between internal and external orientation and years of teaching experience.

Correlations with Number of Teachers in School-based Agricultural Education Programs

An individual's LOC can affect working relationships (Nowicki, 2016). Yet little research was found which explored the correlations between teacher LOC and co-teacher relationships. Still, findings from industry may be applied and inferred to educational settings. In one study, internals performed better in group work than externals and scored higher as preferred teammates (Lord, Phillips, & Rush, 1980). Yet another study showed externals to be more cohesive with internals less satisfied with group work (Dailey, 1978). In studying the effects of group size, Cohen (2007) found larger networks decrease the perceptions of personal sacrifice and commitment to the position, and they discovered internals have better working relations than their external coworkers. Clearly more research is needed in understanding the relationship between LOC and single and multiple teacher programs.

Correlations Between Teacher Self-Efficacy and Teacher Locus of Control

As self-efficacy measures the individual's perceptions of his or her ability to be successful and LOC assesses a person's belief that outcomes are contingent upon their own behaviors, each hold a substantial impact on personal behavioral motivation (Burrell, 1994). People will engage more readily in activities they believe they possess the requirements for success and their actions have a direct impact on the outcome (Bandura, 1993; Rotter, 1966). This relationship mirrors Bandura's reciprocal determinism idea within social learning theory (Miller, 2018). With such similarities in

theoretical foundation and implications on motivating behaviors, one may assume self-efficacy and LOC are closely connected. This assumption is supported by Burrell's (1994) dissertation which found a statistically significant correlation between teacher self-efficacy and teacher LOC by utilizing the Teacher Locus of Control Scale and the Rand Corporation Efficacy Scale. Burrell (1994) concluded, "teachers who had strong teaching and personal efficacy (Rand scale) were significantly more internally-oriented in their beliefs regarding both student successes and failures" (p. 65). However, Ashagi and Beheshtifar (2015) found meaningful correlations only between internal LOC and teacher self-efficacy, but not teachers with an external orientation. Though not directly addressing LOC, Sahin (2017) found teacher self-efficacy to be correlated with some facets of emotional intelligence. The two variables are not interchangeable, yet are interworking in motivating teacher behavior (Burrell, 1994).

Summary

Each linked in social learning theory, teacher self-efficacy and LOC have great implications for student outcomes (Penrose et al., 2007; Senler, 2016; Tully et al., 2015). Rotter's expectancy formula attributes behavior to a function of expectancy and effort outcomes, serving as the foundation of the LOC theory (Rotter, 1966). Bandura's modeling concept is seen in the formation of self-efficacy and LOC (Kelland, 2015; Moreland et al., 2016; Woolfolk, 2007). Reciprocal determinism outlines the interdependence of personal, environmental, and behavioral factors in motivation, self-efficacy, and LOC (Bandura, 1993; Fei Wu & Dia, 2017; Ng-Knight & Schoon, 2017). Self-efficacy and LOC greatly impact motivation as individuals are more likely to participate in activities where they perceive their actions will bring about desired

outcomes, and where they believe they possess the skills needed for success (Bandura, 1993; Rotter, 1966).

Strong self-efficacious teachers are more committed to the profession and hold their students to higher standards (Anderson et al., 1988; Bandura, 1993). Teachers with an internal LOC are more student-centered and less likely to suffer burnout (Cook, 2012; Halpin et al., 1985; McIntyre, 1984). Clearly, teacher self-efficacy and LOC are important teacher traits (Bandura, 1993; Burrell, 1994; Tschannen-Moran & Hoy, 2001).

It is necessary to explore the relationships between each personality trait and sex, age, years of experience, and the presences or absence of co-teachers to answer the fourth research objective in this study. Some strong correlations between a teacher's belief in his or her ability to impact student outcomes in all contexts (Tschannen-Moran & Hoy, 2001) and demographic variables have been unearthed while other factors have mixed results or no relationship. In analyzing sex and teacher self-efficacy, researchers have come to very differing conclusions. Some studies have found no correlation between the two variables (Aziz & Quraishi, 2017). Although some reported females to display higher teacher self-efficacy (Anderson et al., 1988; Karimvand, 2011), others found males have greater teacher self-efficacy (Gungor & Ozdemir, 2017; Klassen & Chiu, 2010). There appears to be a strong positive correlation between age and teacher self-efficacy (Gungor & Ozdemir, 2017; Veldman et al., 2017). Similarly, experienced teachers have greater teacher self-efficacy than novice teachers (Aziz & Quraishi, 2017; Karimvand, 2011; Klassen & Chiu, 2010; McKim & Velez, 2016; Veldman et al., 2017). Multiple teacher programs are likely to boast teachers who are highly self-efficacious in SAEs, more so than single teacher programs (Swortzel, 1996).

Teacher LOC is also tied to demographic variables. Sex and age have produced mixed results when correlated to teacher LOC (Halpin et al., 1985; Richardson, 1987; Woodrow, 1990). Female and older teachers may be more internally controlled than male and younger teachers (Richardson, 1987); although these variables may also show no statistically significant difference in teacher LOC as well (Halpin et al., 1985). Demirkasimoglu et al. (2012) found mid-career teachers to be the most internal. Yet, McCormick and Barnett (2008) reported no statistically significant change in teacher LOC as teachers progress in their careers. Individuals with an internal LOC have been found to have better working relationships with coworkers and are more preferred as teammates while externals are more cohesive in the organization (Dailey, 1978; Lord et al., 1980). In studying correlations between teacher self-efficacy and teacher LOC, Burrell (1994) found strong relationships between the two variables. However, Ashagi and Beheshtifar (2015) found no statistically significant correlations.

CHAPTER III

METHODOLOGY

This chapter is a description of methods and procedures used to complete the objectives of the study. Design, participants, and data collection are discussed. Data analysis and standards for describing data also are included in this description.

Design

A descriptive correlational design was chosen to address the four research objectives of this study. Descriptive studies strive to understand the interested characteristics of the selected population (Creswell, 2015). According to Waters (2017), correlational studies use quantitative data to determine the existence, strength, and direction of relationships between two variables. This research design is used commonly throughout teacher self-efficacy and teacher LOC studies (Ashagi & Beheshtifar, 2015; Aziz & Quraishi, 2017; Demirkasimoglu et al., 2012; Gungor & Ozdemir, 2017; Halpin et al., 1985; Karimvand, 2011; Klassen & Chiu, 2010; McCormick & Barnett, 2007; Woodrow, 1990; Zartman 2015).

Population and Sample

The target population in this study was SBAE teachers Southeast Missouri. A time and place sample from the population was used for this study. Oliver and Hinkle (1982) suggested a group of individuals in a particular year can be considered a sample of

a population over a period of time. Over the last four years, SBAE teachers in Southeast Missouri have seen only 1.90% change in male to female ratio, an 8.64% increase in years of experience, and an 8.00% decrease of SBAE teachers in single teacher programs (Missouri Vocational Agricultural Teacher Association, 2014; 2017), indicating a stable population in the recent past. Therefore, the sample for this study was composed of SBAE teachers employed by public and private schools in the Southeast District of Missouri Vocational Agricultural Teachers Association who paid annual membership dues during the 2017-2018 school year ($N = 52$) (Missouri Department of Elementary and Secondary Education, 2017).

Instrumentation

The data collection instrument was created primarily from two existing instruments. The Teachers' Sense of Efficacy Scale (TSES) was chosen to measure teacher self-efficacy (Tschannen-Moran & Hoy, 2001). This time tested instrument is a highly reliable and valid instrument (Aziz & Quraishi, 2017; Gungor & Ozdemir, 2017; Tschannen-Moran & Hoy, 2001). The 24-item, 9-point summated rating scale is used to determine a teacher's self-efficacy in instruction, management, and engagement, as well as total teacher self-efficacy. Three constructs of instructional strategies, classroom management, and student engagement were developed within the instrument with eight items dedicated to each construct. Subscales were found to have a reliability score of .91, .90, and .87, respectively (Tschannen-Moran & Hoy, 2001). An overview of teacher self-efficacy can be gained by averaging responses on the 24 items (Gungor & Ozdemir, 2017). Higher scores represent a greater sense of teacher self-efficacy (Tschannen-Moran & Hoy, 2001). Studies by Blackburn & Robinson (2008), Gungor and Ozdemir (2017),

Knobloch and Whittington (2002a), and Klassen and Chiu (2010), utilized the TSES in their investigations.

Rose and Medway's (1981) Teacher Locus of Control (TLC) scale was used to collect data associated with the third research objective. Based on Rotter's (1966) original LOC scale, the TLC is a forced option instrument with reliability scores of .81 and .71 (Rose & Medway, 1981). The instrument contains 12 positive student success items and 12 negative student failure items. Each item includes an internal, teacher centered option and an external, circumstance related option. "One point is awarded for each internal alternative" (Rose & Medway, 1981, p. 186). A score of 13 or above indicates the respondent has an internal teacher LOC. A score of 12 or less indicates the respondent has an external teacher LOC (Rose & Medway, 1981). Burrell (1994) and Toussi and Ghanizadeh (2012) used the TLC in a very similar studies to compare teachers' self-efficacy and LOC. The TSES and TLC instruments were combined in their entirety with four questions added to collect information about the subjects' sex, age, teaching experience, and program size.

Data Collection

The main data collection site was the Southeast District Career Development Events (CDE). An email was sent on March 28, 2018 to notify teachers of the study and provide a participant information letter. A reminder email was sent on April 3, 2018. Hard copies of the data collection instrument were distributed on April 4, 5, and 7, 2018 in Cape Girardeau, Missouri. Agricultural teachers completed the instrument throughout the day as time permitted. Completed instruments were collected from 40 subjects during the event. The 12 teachers who did not complete the instrument at that time were

contacted via email on April 9 and directed to an online version of the instrument. An additional nine completed instruments were collected over the next week through this process. A total of 49 responses were collected with a response rate of 94.23%. As this response rate was well above the 85% advised by Linder, Murphy, and Briers (2001), no efforts were made to address nonresponse rate.

Data Analysis

IBM's Statistical Package for Social Sciences (SPSS) version 23 was used for data input and analysis. Years of teaching experience were recorded to include the current school year. Therefore, those who were in their first year of teaching would answer one year of experience. Novice teachers were separated from experienced teachers. Those with five or fewer years of experience were classified as novice while teachers with six or more years of experience were considered experienced (Aziz & Quraishi, 2017).

Teachers who were the only agricultural instructor employed by their school district were considered single teacher programs while those with at least one teaching partner were classified as multiple teacher programs (Boone & Boone, 2007).

The 24 TSE scaled response items were averaged to create the teacher self-efficacy score (Gungor & Ozdemir, 2017). Potential scores ranged from 1.00 to 9.00 with higher scores indicating a greater level of teacher self-efficacy (Tschannen-Moran & Hoy, 2001). For the purposes of statistical tests, data were grouped into quartiles. The bottom 25% of teacher self-efficacy scores were classified as low, the middle 50% as moderate, and the upper 25% as high teacher self-efficacy (Creswell, 2015). The TLC scale responses were assessed to determine the number of responses marked as internal. Participants could score from 0.00 to 25.00. Scores ranging from 0.00 to 12.00 were

classified as external while 13.00 to 25.00 were considered internal teachers (Rose & Medway, 1981).

Statistical Procedures

Several statistical tests were utilized to address the objectives of this study. The first research objective aimed to describe selected demographic characteristics of the sample. Therefore, modes of central tendency and variability such as means, range, standard deviations, frequencies, and percentages were utilized (Creswell, 2015). Objectives 2 and 3 described the teacher self-efficacy and teacher locus of control of the sample, respectively. For these objectives, means and standard deviations were analyzed, and data were categorized as described above. Once categorized, frequencies could be assessed (Privitera, 2015). Objective 4 focused on the correlations between the six variables and necessitated inferential statistics. Pearson's r correlation tests were used to determine the magnitude and direction of relationship amongst variables (Creswell, 2015). Effect sizes are defined as $r = .10$ is small, $r = .30$ as medium, and $r = .50$ is large (Ary, Jacobs, Razavieh, & Sorensen, 2006). With categorical data, such as sex and teacher LOC, independent t -tests were used to discern significant differences between groups (Privitera, 2015). According to Creswell (2015), the results of these tests can be evaluated with Chi-square and ANOVA results to ensure conclusions conquer. Statistical significance was defined as $p < .05$ (Privitera, 2015).

CHAPTER IV

FINDINGS

This chapter is a presentation of findings for each research objective. The chapter is organized by objective, and data are presented with narrative descriptions along with tables and graphic illustrations, when appropriate.

Findings Associated with Objective One

The first objective of this study sought to describe the sex, age, years of teaching experience, and program type of Southeast Missouri SBAE teachers. Data revealed 35 respondents were male (71.43%). Figure 2 depicts the breakdown of sexes.

Ages ranged from 22 to 61 with a mean age of 38.76 and a standard deviation of 11.95 (see Table 1). There were 15 teachers (30.61%) between 22 and 29 years old, 9 (18.37%) in their 30s, 13 (26.53%) were in their 40s, with 12 teachers (24.49%) being 50 years or older. Years of experience ranged from 1 to 33 with a mean of 12.73 and standard deviation of 9.12 (see Table 1). Figure 3 displays the frequencies of novice and experienced teachers as defined by Aziz and Quraishi (2017). Experienced teachers comprised 71.43% of SBAE teachers in Southeast Missouri during the 2017-2018 school year.

Program types were nearly evenly matched with 25 (51.00%) respondents in single teacher programs and 24 (49.00%) in multiple teacher programs (see Figure 4). The Southeast District is comprised of 27 single teacher programs and 10 multiple teacher programs (Missouri Vocational Agricultural Teacher Association, 2017).

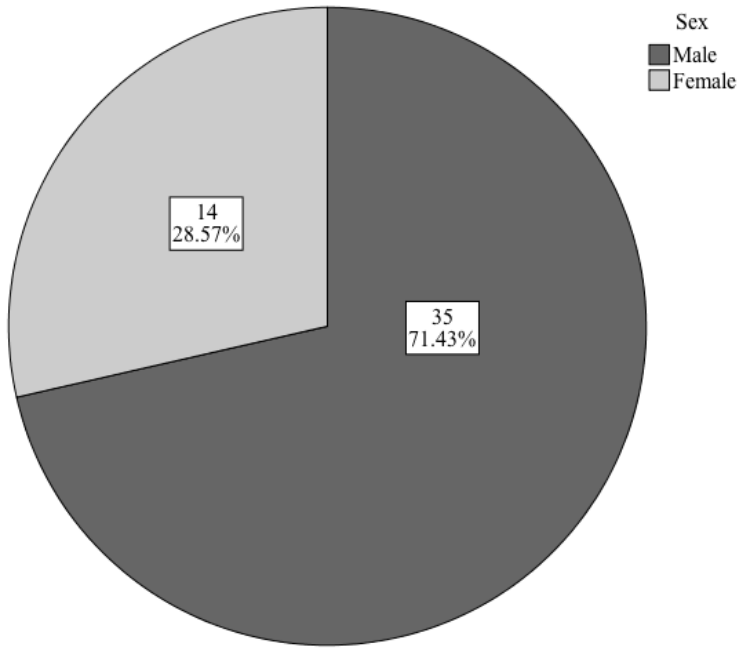


Figure 2. Sex composition of Southeast Missouri SBAE teachers.

Table 1

Age and Years of Experience Descriptive Statistics

Characteristic	Minimum in Years	Maximum in Years	Mean in Years	SD
Age	22	61	38.76	11.95
Experience	1	33	12.73	9.12

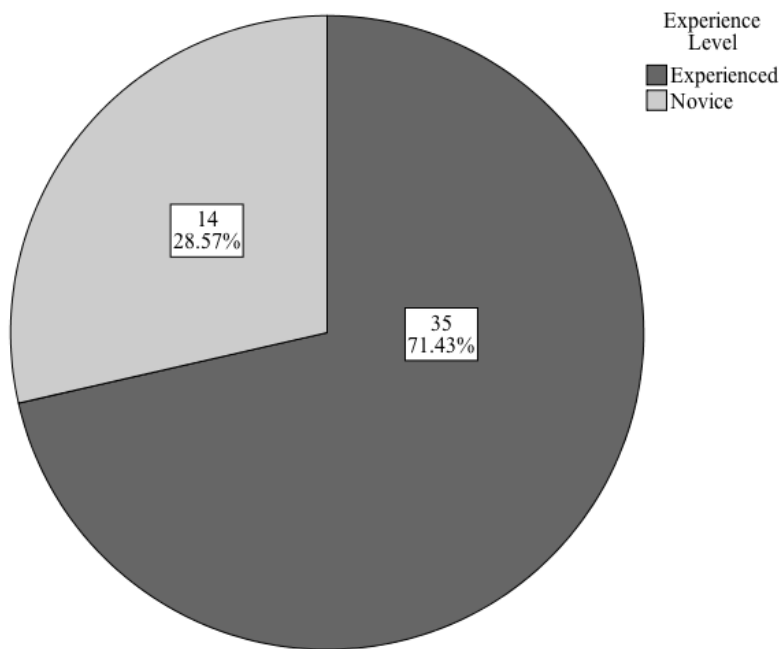


Figure 3. Experience level of Southeast Missouri SBAE teachers.

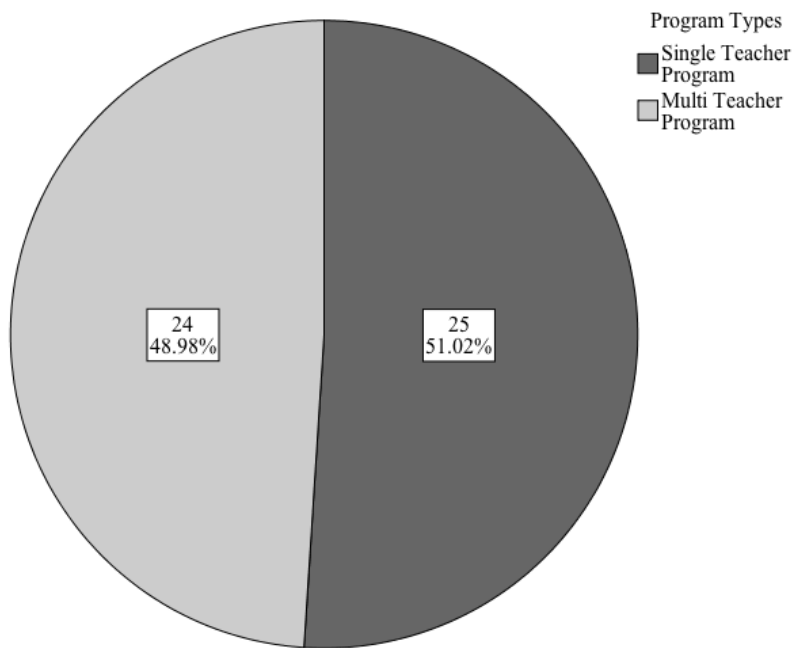


Figure 4. Program types of Southeast Missouri SBAE teachers.

Findings Associated with Objective Two

The second objective was to describe the teacher self-efficacy of subjects. The average score on the 9-point summated scale TSES was 6.55 with a standard deviation of .88. Scores ranged from 3.63 to 8.46. Only one participant scored lower than the midpoint of 4.50. The population distribution is negatively skewed, as shown in Figure 5. For the purpose of analysis, TSE scores were grouped in quartiles (Creswell, 2015). Those individuals scoring 5.92 or less were in the lowest teacher self-efficacy group. Those with a score of 5.92-6.54 were in the moderate group. Finally, those with scores exceeding 6.54 were in the highest teacher self-efficacy group. Figure 6 shows the frequency of the three groups. More than 26% scored as low, 28.57% were in the moderate group, and 44.90% averaged above 6.54, placing them in the high teacher self-efficacy classification.

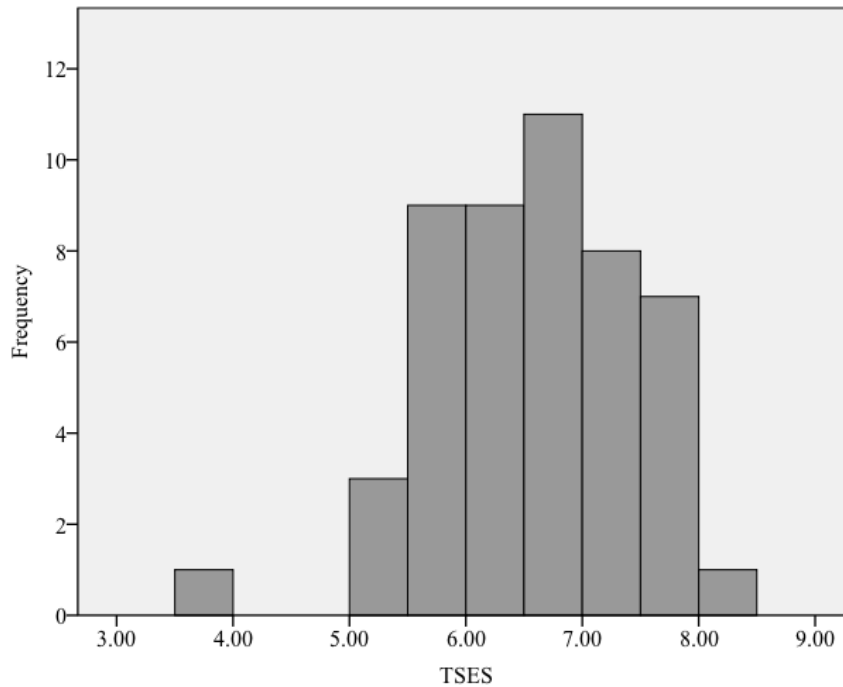


Figure 5. Teacher Self-Efficacy Scale score frequencies.

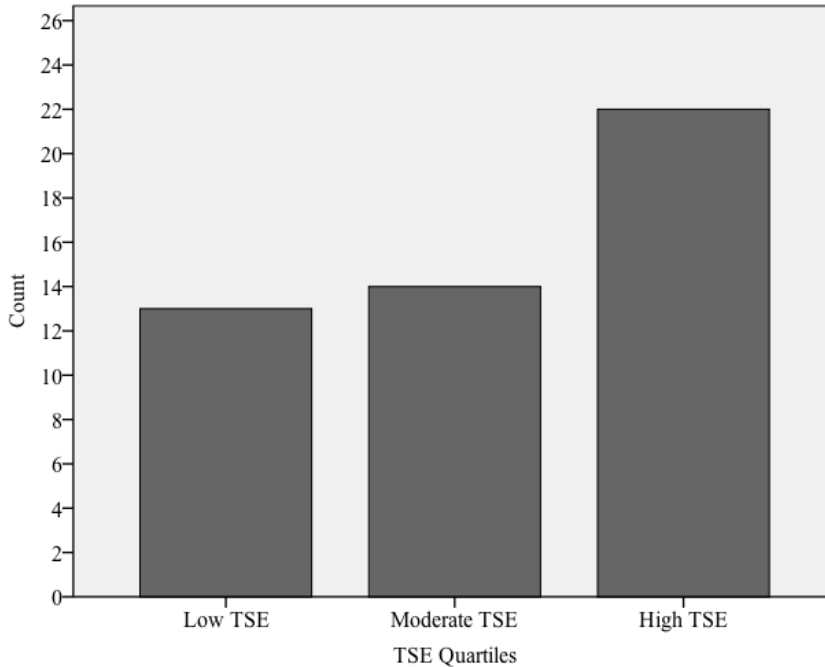


Figure 6. TSE quartiles of Southeast Missouri SBAE educators.

Findings Associated with Objective Three

The third research objective was concerned with the teacher LOC of Southeast Missouri SBAE teachers. The 25-item Teacher Locus of Control scale ranged from 0 to 22 with a mean of 9.71 and standard deviation of 4.44. The population distribution is positively skewed, as seen in Figure 7. In accordance with procedures prescribed by Rose and Medway (1981), those subjects responding as internal on more than one-half (13 or more) of the items were categorized as internal teacher LOC and those choosing the internal option on less than one-half (12 or less) of the items were categorized as external teacher LOC. External teachers comprised 71.43% of the SBAE teachers in Southeast Missouri. Figure 8 displays the frequencies and percentages of teacher LOC in Southeast Missouri SBAE teachers.

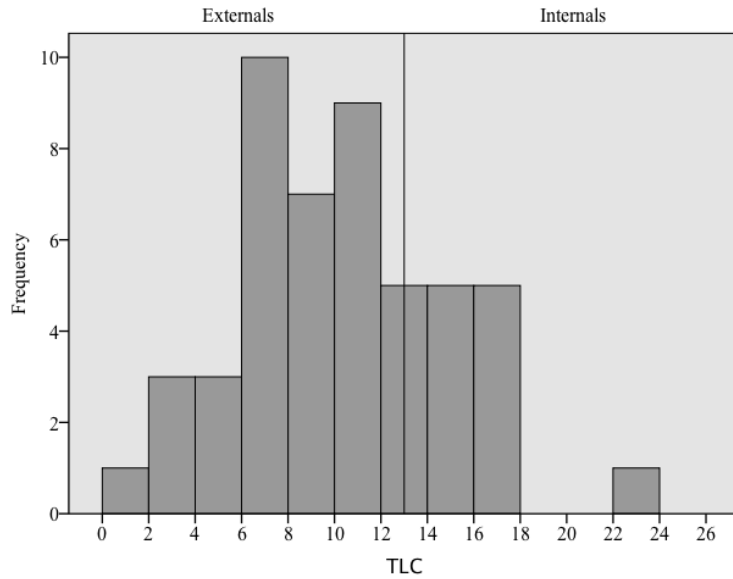


Figure 7. Teacher Locus of Control score frequencies.

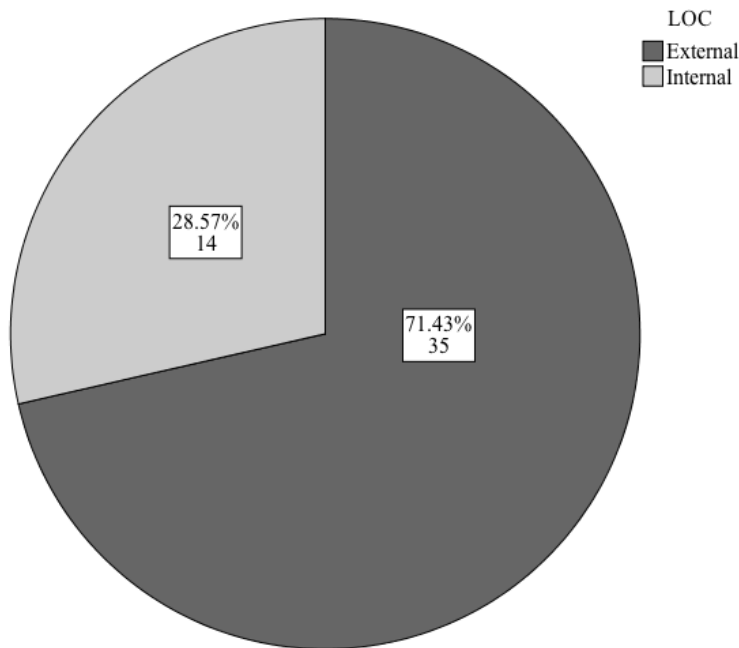


Figure 8. LOC of Southeast Missouri SBAE teachers.

Findings Associated with Objective Four

Objective four examined relationships among teacher sex, age, experience, program type, self-efficacy, and LOC. Table 2 displays correlation coefficients between

variables. There were statistically significant correlations between sex and years of teaching experience as well as sex and program type. Teacher age was found to have a statistically significant relationship with every variable.

Table 2

Correlation Coefficients by Research Variable

		Sex	Age	Experience	Prog Type	TSE	LOC
Sex	Pearson's <i>r</i>	1	-.40**	-.31*	.28*	.04	-.01
	Sig. (2-tailed)		.01	.03	.05	.77	.94
Age	Pearson's <i>r</i>	-.40**	1	.83**	-.39**	.32*	-.28*
	Sig. (2-tailed)	.01		.00	.01	.03	.05
Experience	Pearson's <i>r</i>	-.31*	.83**	1	-.25	.28	-.21
	Sig. (2-tailed)	.03	.00		.08	.05	.15
Prog Type	Pearson's <i>r</i>	.28*	-.39**	-.25	1	-.11	.18
	Sig. (2-tailed)	.05	.01	.08		.47	.23
TSE	Pearson's <i>r</i>	.04	.32*	.28	-.11	1	-.03
	Sig. (2-tailed)	.77	.03	.05	.47		.84
LOC	Pearson's <i>r</i>	-.01	-.28*	-.21	.18	-.03	1
	Sig. (2-tailed)	.94	.05	.15	.23	.84	

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Teacher self-efficacy expressed statistically significant ($p < .05$) relationships with age and experience level. There was a medium positive ($r = .32$) correlation between age and teacher self-efficacy. Table 3 shows the low teacher self-efficacy group has the youngest average age and the high self-efficacy teachers are the oldest group. In an independent t -test, there was a statistically significant difference, $t(47) = -2.02$, $p < .05$, in teacher self-efficacy scores between novice and experienced SBAE teachers of Southeast Missouri.

Teacher self-efficacy was not statistically significantly correlated with sex, program type, or LOC (see Table 2). The Pearson's $r = -.03$ between teacher self-efficacy and teacher LOC show nearly no relationship. Figure 9 plots teachers' scores on both the

TSE Scale and Teacher LOC Scale. Though the majority of Southeast Missouri SBAE teacher were grouped in the lower two-thirds of the LOC axis, most teachers scored in the high self-efficacy, low LOC quadrant.

Table 3

Ages of Teacher Self-Efficacy Quartiles

TSE Quartiles	<i>f</i>	%	<i>M</i>	<i>SD</i>
Low (<5.92)	13	26.53	34.77	10.10
Moderate (5.92-6.54)	14	28.57	36.93	12.01
High (>6.54)	22	44.90	42.27	12.41

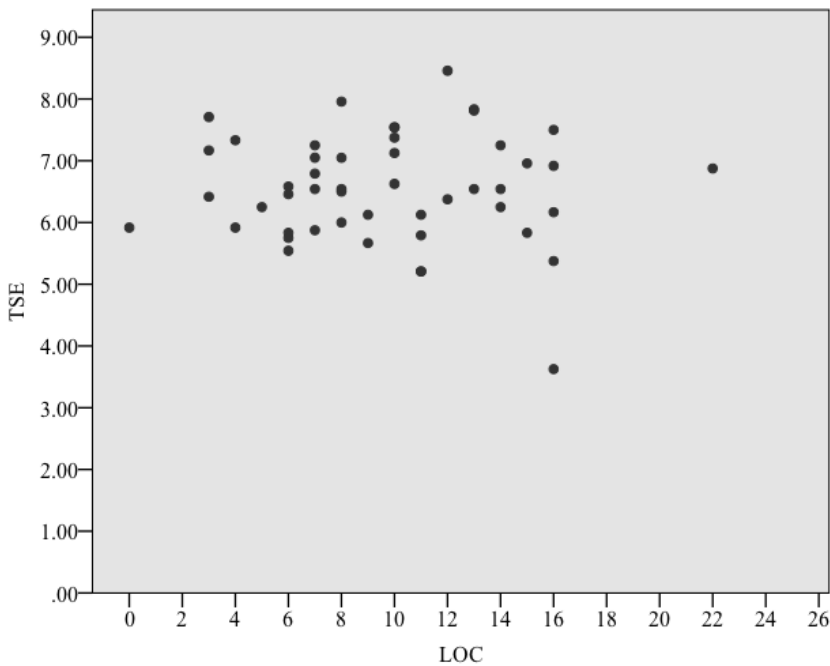


Figure 9. LOC and TSE of Southeast Missouri agricultural educators.

LOC was found to have a statistically significant ($p < .05$) relationship with age and experience level and single/multiple teacher program classifications (see Table 2). Age had a small negative ($r = -.28$) correlation with LOC in SBAE teachers of Southeast Missouri. On average, internals were seven years younger than externals, as shown in Table 4.

Table 4

Ages of LOC Classifications

LOC	<i>f</i>	%	<i>M</i>	<i>SD</i>
External	35	71.43	40.94	11.16
Internal	14	28.57	33.29	12.51

Chi-square tests revealed a difference in the LOC make-up across experience levels and program types of Southeast Missouri agricultural education programs. LOC and experience level chi-test ($\chi^2(1) = 4.41, p < .05$) showed a majority of externals had more than five years of teaching experience while internals were evenly distributed among the novice and experienced classifications (see Table 5). There were statistically significantly, $\chi^2(1) = 6.868, p < .05$, more externals as single agricultural education teacher programs than internals in Southeast Missouri. Likewise, more internals were employed in multiple teacher programs (see Table 6). Neither sex nor self-efficacy held a statistically significant ($p > .05$) correlation with LOC (see Table 2).

Table 5

LOC Classification by Experience Level

			Experience Level		
			Novice	Experienced	Total
LOC	External	Count	7	28	35
		Expected Count	10.0	25.0	35.0
		Adjusted Residual	-2.1	2.1	
	Internal	Count	7	7	14
		Expected Count	4.0	10.0	14.0
		Adjusted Residual	2.1	-2.1	
Total	Count	14	35	49	
	Expected Count	14.0	35.0	49.0	

Table 6

LOC Classifications by Program Type

			Program Types		
			Single Teacher	Multi Teacher	Total
LOC	External	Count	22	13	35
		Expected Count	17.9	17.1	35.0
		Adjusted Residual	2.6	-2.6	
	Internal	Count	3	11	14
		Expected Count	7.1	6.9	14.0
		Adjusted Residual	-2.6	2.6	
Total	Count	25	24	49	
	Expected Count	25.0	24.0	49.0	

Sex was statistically significantly ($p < .05$) correlated with age, experience, and program type (see Table 2). On average, female teachers were 10 years younger than males and had taught 6 fewer years (see Table 7). Females also were much less likely to teach in a single teacher program. Table 8 shows there were more than five times as many males in single teacher programs than females and 50% more males in single teacher programs than those with teaching partners.

Table 7

Male and Female Teacher Ages and Experience

Sex	Age		Experience	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Male	41.71	11.77	14.49	1.53
Female	31.36	9.08	8.36	2.15

Age had a statistically significant relationship ($p < .05$) with all other variables (see Table 2). Age and experience had a large, positive correlation ($r = .83$). Single program teachers were, on average, nine years older than their counterparts in multiple teacher programs (see Table 9).

Table 8

Sex and Program Types

		Program Type		Total
		Single Teacher	Multi Teacher	
Sex	Male	21	14	35
	Female	4	10	14
Total		25	24	49

Table 9

Age of Teachers in the Program Types

Program Type	<i>f</i>	%	<i>M</i>	<i>SD</i>
Single Teacher	25	51.02	43.24	11.42
Multi Teacher	24	48.98	34.08	10.84

CHAPTER V

CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

This chapter presents conclusions drawn from the findings of this study. Implications and recommendations associated with each conclusion are also discussed. The chapter is organized by research objectives.

Summary

Purpose

The purpose of this study was to analyze Southeast Missouri SBAE teachers' self-efficacy and locus of control. Relationships between Southeast Missouri SBAE teacher self-efficacy, teacher LOC, and demographic data were examined to assess if there was a connection between teacher self-efficacy, teacher LOC, sex, age, years of teaching experience, and single/multi teacher programs.

Research Objectives

1. Describe the selected personal and professional characteristics of SBAE teachers in the Missouri Vocational Agricultural Teacher Association Southeast District including sex, age, years of teaching experience, and employment in single versus multiple teacher programs.
2. Assess the teacher self-efficacy of SBAE teachers in the Missouri Vocational Agricultural Teacher Association Southeast District.

3. Determine teacher locus of control for SBAE teachers in the Missouri Vocational Agricultural Teacher Association Southeast District.
4. Examine relationships between teacher self-efficacy, teacher locus of control, sex, age, years of teaching experience, and employment in single versus multiple teacher programs of SBAE teachers in the Missouri Vocational Agricultural Teacher Association Southeast District.

Conclusions, Implications, and Recommendations

Objective One

The first objective of this study was to describe the sex, age, years of teaching experience, and program types of agricultural educators in the Southeast District of Missouri.

The typical school-based agricultural education instructor in the Southeast District of Missouri Vocational Agricultural Teacher Association is a 38 year old male. He is in his 12th year of teaching and he teaches in a single teacher program. The population of this study was predominately male (71.43%). This result aligns with findings from a national study of SBAE teachers by Baxter, Stephens, and Thayer-Bacon (2011) who reported 73% male teachers and 27% female teachers. Those percentages differ, however, from the 2017 Executive Summary by Smith, Lawver, and Foster that found only 5% difference in the national male and female population of SBAE teachers and female preservice teachers comprised 69% of agricultural education students in teacher preparation programs.

So, although the male/female composition of SBAE teachers are nearly even on the national level with an influx of female preservice teachers, male SBAE teachers out

number females 2.5:1 in Southeast Missouri. Why is there such a disparity between the male/female ratio among SBAE teachers in Southeast Missouri as compared to the current national statistics? Is there a factor in the work environment for SBAE teachers or the culture of Southeast Missouri precipitating this situation?

The average age of a SBAE teacher in Southeast Missouri is 38.76 years. Nearly one-quarter of teachers in this region of Missouri will be of retirement age in the next 10 years (Veldman et al., 2017). This region may experience greater SBAE teacher shortages with retirements in coming years (Krysher, Robinson, & Edwards, 2015).

Years of experience follows a very similar trend to teacher age. The average teacher is in what might be considered mid-career stage with 12.73 years of experience. Nearly 30% of SBAE teachers in Southeast Missouri are novices with less than 6 years of teaching experience. These individuals may require additional mentoring and professional development (Gungor & Ozdemir, 2017). The 35 experienced SBAE teachers in Southeast Missouri may be valuable source of coaching for younger, novice colleagues (Garvis, Twigg, & Pendergast, 2011).

Single teacher and multiple teacher programs are nearly equally represented in this sample, though there are almost three times as many single teacher programs in the district. The strain of additional activities, meetings, and workload may be felt more strongly for a one teacher program that may lack the resources of a multiple teacher program (Swortzel, 1996). Boone and Boone (2007) discovered co-teacher relationships to be one of the biggest stressors for both beginning and established agricultural educators.

These demographic data brings to light several needs for further research. Southeast Missouri has been largely ignored by agricultural education researchers in the past. Teacher sex, age, years of experience, and program type of Southeast Missouri school-based agricultural educators need to be compared to their colleagues across the state to identify any anomalies in this unique district of Missouri.

Objective Two

The second objective focused on the self-efficacy of SBAE teachers as assessed by Tschannen-Moran's and Hoy's (2001) Teachers' Sense of Efficacy Scale.

The typical SBAE teacher in Southeast Missouri is highly self-efficacious. Nearly 45% of teachers scored in the highest quartile of the teacher self-efficacy score range. With an average score of 6.55 out of 9.00, and only one teacher scoring below a 4.50, it may be inferred this population possesses a strong perception of their abilities as a teacher. As a whole, this group believes they are able to influence student outcomes, even among the most difficult individuals (Tschannen-Moran & Hoy, 2001).

Professional development and mentoring could be used to bolster those teachers with lower teacher self-efficacy (Bandura, 1993; Tschannen-Moran & Hoy, 2001). Previous research alludes to the importance of self-efficacy in career longevity and commitment to the profession (McKim et al., 2017; Veldman et al., 2017) as well as teacher motivation and student achievement (Anderson et al., 1988). Bandura's (1977; 1993) modeling theory states self-efficacy is contrived through attention, retention, reproduction, and motivation. The teacher induction program currently in place matches a protégé in their first and second year of teaching with a qualified mentor (Missouri Department of Elementary and Secondary Education, 2013). Yet teachers remain novices

at the completion of this program and would benefit greatly from additional instruction from these vital role models (Garvis, et al., 2011). Vicarious experiences and feedback through both formal and informal coaching opportunities would build the self-efficacy of younger teachers (Bandura, 1977). Through additional mentoring and coaching programs, the self-efficacy of younger SBAE teachers may rise (McKim & Velez, 2016). Once again, additional research is needed to analyze the comparison of Southeast Missouri SBAE teachers' self-efficacy and SBAE teachers throughout Missouri and across the nation, potentially with an SBAE specific summated scale instrument to assess teacher self-efficacy throughout the three-circle model, to better understand teacher motivation of SBAE teachers.

Objective 3

The third objective assessed LOC of SBAE teachers, as determined by Rose's and Medway's (1981) Teacher Locus of Control Scale.

The typical SBAE teacher in Southeast Missouri has an external LOC. The externals in this group outnumber internals 2.5 to 1. External teachers perceive student outcomes and teaching circumstances to be outside of their control (Halpin et al., 1985). They are more likely contribute success or failure to student attributes or other extenuating circumstances (Burrell, 1994). In addition, they are more at risk for burnout and decreased commitment to teaching (Cook, 2012; McIntyre, 1984). Student performance may be at risk due to teachers' external LOC perceptions (Murray & Staebler, 1974; Woodrow, 1990). Barrick (2012) encouraged agricultural educators to think of themselves as "architects of our own fate" (p. 3). Yet it seems SBAE teachers in Southeast Missouri do not share his perceptions.

The absence of LOC research in agricultural education literature needs to be addressed before the LOC of Southeast Missouri's SBAE teachers can be understood fully. Rotter's expectancy formula predicts future behavior as a function of expectations and previous experiences (Rotter, 1966). Theoretically, if these expectations can be changed, perhaps LOC may be affected (Ng-Knight & Schoon, 2017). Professional development could be implemented to mitigate the negative effects of external LOC and inform SBAE educators of their ability to impact students outcomes so they may "realize that he/she is influential in the classroom" (Halpin et al., 1985, p. 139). They should have the tools necessary to positively impact all students and feel they are making a difference for them, their school, and community. An interruption to the reciprocal determinism between LOC, cognitive, behavioral, and environmental factors through teacher support and professional development may impact teacher motivation (Ng-Knight & Schoon, 2017).

Objective 4

The final objective explored relationships between the various variables of the study.

Teacher self-efficacy increases as a teacher becomes older and gains more experience in his or her career. This relationship corroborates Bandura's (1977; 1993) theory that proposes self-efficacy is reinforced over time and high teacher self-efficacy is commonly tied to commitment to teaching. Studies by Gungor and Ozdemir (2017), McKim et al. (2017), and Veldmann, Admiraal, Mainhard, Wubbels, and van Tartwijk (2017) also found a positive association between age and teacher self-efficacy.

SBAE teachers with more than five years of experience perceive greater self-efficacy beliefs than novice teachers. Studies by Aziz and Quraishi (2017), Karimvand (2011), Klassen and Chiu (2010), McKim and Velez (2016) and Veldman et al. (2017) support this finding. The beginning years of teachers' careers are the most important to teacher self-efficacy development (Krysher et al., 2015). The older, more experienced teachers are a vital model for younger, novice professionals to hone their craft (Garvis et al., 2011).

Teacher self-efficacy is not influenced by sex or SBAE program type. There are no perceivable differences in teacher self-efficacy scores between male and female SBAE teachers in Southeast Missouri. This finding aligns with Aziz's and Quraishi's (2017) research. It differs, however, with results from studies by Anderson et al. (1988) and Karimvand (2011) that found females were more self-efficacious, as well as studies by Gungor and Ozdemir (2017) and Klassen and Chiu (2010) that concluded males hold higher self-efficacy beliefs. Additional research is needed about the influence of sex on teacher self-efficacy.

SBAE teachers in Southeast Missouri who teach in single teacher SBAE programs are just as self-efficacious as those in multiple teacher programs. This conclusion differs from Swortzel's (1996) hypothesis that teachers in single teacher programs have lower SAE self-efficacies than their counterparts in multiple teacher programs. It should be noted, however, the review of literature yielded no other research on this topic. As such, more research should be conducted to explore the impact of SBAE program characteristics on teacher self-efficacy.

There is no relationship between teacher self-efficacy and LOC in Southeast Missouri agricultural educators. Southeast Missouri SBAE teachers were generally high in self-efficacy and had an external LOC. Although they feel confident in the classroom, they attribute educational outcomes as outside of their control. Though the two variables share theoretical foundations in social learning theory, modeling, reciprocal determinism, and impact on behavioral motivation (Bandura, 1977; 1993; Rotter, 1966), this study revealed no relationship between scores on the Teachers' Sense of Efficacy Scale and the Teacher Locus of Control Scale. In contrast, Burrell (1994) as well as Ashagi and Beheshtifar (2015) found teachers with greater self-efficacy beliefs were more internally controlled.

Older, more experienced SBAE teachers in single teacher programs in Southeast Missouri are more external in their LOC. As Southeast Missouri agriculture teachers age, they are more likely to view educational circumstances as outside of their control. This result is in contrast to Richardson's (1987) study that found older teachers tend to have more internal LOC and Halpin et al. (1985) who found no relationship between teacher age and LOC. Additional study is needed to conceptualize the relationship of age and teacher LOC.

The more experienced teachers hold beliefs educational outcomes are outside of their control (Rotter, 1966). These experienced teachers serve as models for novice teachers and may spread their beliefs according to Bandura's modeling theory. This result disagrees with the findings of Demirkasimoglu et al. (2012) who found teachers in the middle of their career span tend to be the most internal. McCormick and Barnett (2008) claimed there is no relationship between teacher experience and LOC.

The external LOC SBAE teachers of Southeast Missouri are disproportionately found in single teacher programs. Therefore, the impacts of an external LOC may be more heavily concentrated in the 27 single teacher programs throughout Southeast Missouri. Additional research will help address the potential characteristics of single teacher programs that contribute to the agricultural educators' perception that outcomes are the result of circumstances outside of their control. Although there is a void of research comparing the LOC of single and multiple teacher programs, this finding corroborates Lord, Phillips, and Rush (1980) who found internals are better team players and Cohen (2007) who deduced internals have more harmonious relationships with coworkers.

There were no statistically significant differences in LOC between male and female SBAE teachers in Southeast Missouri. Halpin et al. (1985) and Woodrow (1990) came to the same conclusion regarding LOC differences based on sex, while Richardson (1987) discovered female teachers were more internally controlled. Researchers should implement Rotter's theory and study LOC formation and implication in agricultural education.

Among SBAE teachers in Southeast Missouri, males are older, have more years of teaching experience, and are more likely to be the only agriculture teacher in their school district. Data clearly show when comparing these teachers based on sex, there are differences in age, experience and SBAE program types. As stated previously, the status of female SBAE teachers' age, experience, and program type in Southeast Missouri needs to be explored.

Older SBAE teachers in Southeast Missouri have taught longer and are commonly in a single teacher program. The majority of Southeast Missouri SBAE teachers are traditionally certified and career teachers, as displayed by the covariant relationship between age and experience. They are highly qualified for the position of high school agricultural educators and need to be treated as professionals. Why is there an age gap between single and multiple teacher programs? What program characteristics, if any, are more attractive to younger or older teachers?

Novice and experienced teachers populate single and multiple teacher programs in Southeast Missouri. Single teacher programs may require additional SAE training (Swartzel, 1996) and multiple teacher programs may require more interpersonal support (Boone & Boone, 2007) for novice teachers.

Discussion

The external characteristics of the professional SBAE teacher population in Southeast Missouri are contrary to descriptions found in the literature (Barbuto & Story, 2010; Carton et al., 1996; Halpin et al., 1985; Nowicki, 2016; Rotter, 1966). Validity errors, as well as sample size, could attest to the discrepancy in this finding. However, the externality of LOC in Southeast Missouri agricultural educators may be a product of other confounding demographical variables. The regional economy is greatly impoverished with high rates of poverty in many counties (Missouri Census Data Center, 2013). As with other poverty stricken areas, Southeast Missouri carries a certain reputation. As Bandura (1993) described, this perception evolves into feedback absorbed by SBAE teachers who may then turn those perceptions into realities. Low income may promote external LOC development (Ng-Knight & Schoon, 2017). What impact, if any,

does the environmental factors of Southeast Missouri play on the LOC of SBAE teachers? Could the external LOC perceptions of SBAE teachers help explain lack of success of Southeast district SBAE programs in state level contests (Missouri FFA 2018a; 2018b; 2018c)? The only way to answer these uncertainties is through additional LOC research in agricultural education literature. It may be beneficial to conduct another study on this topic with SBAE teachers in Southeast Missouri using a summated scale instrument developed specifically for SBAE teachers. Through unsolicited oral feedback, various subjects in this study expressed frustration with the ambiguity of response choices in Rose's and Medway's Teacher LOC Scale. Populations need to be analyzed among themselves and compared to other populations, such as science teachers and athletic coaches to understand this phenomenon. Without additional research and LOC data collection, the LOC of Missouri's Southeast District SBAE teachers cannot be understood fully.

Application of this research is limited to the target population. Additional confounding variables such as income levels and time constraints were not analyzed and may influence the collected data. It is assumed all participants answered instrument items truthfully and to the best of their ability.

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APPENDICES

Southeast Missouri Agriculture Teacher Instrument

The following information is provided to help you decide if you wish to participate in the present study. You should be aware that you are free to decide not to participate or to withdraw at any time without repercussions.

Feel free to reach out with any questions, comments, or concerns related to this study. I will be happy to share the results when finalized. Your answers will be recorded anonymously and will remain confidential.

There are no known risks associated with this study. The expected benefit will result in the additional knowledge gained by researchers about Southeast Missouri agriculture teachers.

This instrument contains three sections and is designed to assist researchers in better understanding the personal and professional characteristics of Southeast Missouri vocational agriculture teachers. Estimated time of completion is 20 minutes. Please answer all questions honestly and with your first instinct. Thank you for your time.

Section I: Demographic Information

Directions: Please complete the questions honestly. Your answers are confidential and anonymous.

1. I am
 - a. Male
 - b. Female
2. I am _____ years old.
3. Including this year, I have been teaching for _____ year(s).
4. There is a total of _____ agriculture teacher(s) in my school district.

Section II: Teacher Self-Efficacy

Directions: These questions are designed to help us gain a better understanding of what creates difficulties for teachers in their school activities. Please indicate your opinion about each of the statements below. Your answers are confidential.

	Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal
1. How much can you do to get through to the most difficult students?	1	2	3	4	5	6	7	8	9
2. How much can you do to help your students think critically?	1	2	3	4	5	6	7	8	9
3. How much can you do to control disruptive behavior in the classroom?	1	2	3	4	5	6	7	8	9
4. How much can you do to motivate students who show low interest in school work?	1	2	3	4	5	6	7	8	9
	Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal
5. To what extent can you make your expectations clear about student behavior?	1	2	3	4	5	6	7	8	9
6. How much can you do to get students to believe they can do well in school work?	1	2	3	4	5	6	7	8	9

7. How well can you respond to difficult questions from your students?	1	2	3	4	5	6	7	8	9
8. How well can you establish routines to keep activities running smoothly?	1	2	3	4	5	6	7	8	9
	Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal
9. How much can you do to help your students value learning?	1	2	3	4	5	6	7	8	9
10. How much can you gauge student comprehension of what you have taught?	1	2	3	4	5	6	7	8	9
11. To what extent can you craft good questions for your students?	1	2	3	4	5	6	7	8	9
12. How much can you do to foster student creativity?	1	2	3	4	5	6	7	8	9
	Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal
13. How much can you do to get children to follow classroom rules?	1	2	3	4	5	6	7	8	9
14. How much can you do to improve the understanding of a student who is failing?	1	2	3	4	5	6	7	8	9

15. How much can you do to calm a student who is disruptive or noisy?	1	2	3	4	5	6	7	8	9
16. How well can you establish a classroom management system with each group of students?	1	2	3	4	5	6	7	8	9
	Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal
17. How much can you do to adjust your lesson to the proper level for individual students?	1	2	3	4	5	6	7	8	9
18. How much can you use a variety of assessment strategies?	1	2	3	4	5	6	7	8	9
19. How well can you keep a few problem students from ruining an entire lesson?	1	2	3	4	5	6	7	8	9
20. To what extent can you provide an alternative explanation or example when students are confused?	1	2	3	4	5	6	7	8	9
	Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal
21. How well can you respond to defiant students?	1	2	3	4	5	6	7	8	9

22. How much can you assist families in helping their children do well in school?	1	2	3	4	5	6	7	8	9
23. How well can you implement alternative strategies in your classroom?	1	2	3	4	5	6	7	8	9
24. How well can you provide appropriate challenges for very capable students?	1	2	3	4	5	6	7	8	9

Section III: Teacher Locus of Control

Directions: For each item, please circle the letter corresponding to the option you believe best completes the sentence. Use your first instinct. Your answers are confidential.

1. When the grades of your students improve, it is more likely
 - a. because you found ways to motivate the students, or
 - b. because the students were trying harder to do well.

2. Suppose you had difficulties in setting up learning centers for students in your classroom. Would this probably happen
 - a. because you lacked the appropriate materials, or
 - b. because you didn't spend enough time in developing activities to go into the center?

3. Suppose your students did not appear to be benefiting from a more individualized method of instruction. The reason for this would probably be
 - a. because you were having some problems managing this type of instruction, or
 - b. because the students in your class were such that they needed a more traditional kind of approach.

4. When a student gets a better grade on his report card than he usually gets, is it
 - a. because the student was putting more effort into his schoolwork, or
 - b. because you found better ways of teaching that student?

5. If the students in your class become disruptive and noisy when you left them alone in the room for five minutes, would this happen
 - a. because you didn't leave them interesting work to do while you were gone, or
 - b. because the students were more noisy that day than they usually are?

6. When some of your students fail a test, it is more likely
 - a. because they weren't attending to the lesson, or
 - b. because you didn't use enough examples to illustrate the concept.

7. Suppose you were successful at using learning centers with your class of 30 students. Would this occur
 - a. because you worked hard at it, or
 - b. because your students easily conformed to the new classroom procedure?

8. When a student pulls his or her grade up from a "C" to a "B," it is more likely
 - a. because you came up with an idea to motivate the student, or
 - b. because the student was trying harder to do well.

9. Suppose you are teaching a student a particular concept in arithmetic or math and the student has trouble learning it. Would this happen
 - a. because the student wasn't able to understand it, or
 - b. because you couldn't explain it very well?

10. When a student does better in school than he usually does, is it more likely
 - a. because the student was trying harder, or
 - b. because you tried hard to encourage the student to do better.

11. If you couldn't keep your class quiet, it would probably be
 - a. because the students came to school more rowdy than usual, or
 - b. because you were so frustrated that you weren't able to settle them down.

12. Suppose a play put on by your class was voted "Best Class Play of the Year" by students and faculty in your school. Would it be
 - a. because you put in a lot of time and effort as the director, or
 - b. because the students were cooperative?

13. Suppose it were the week before Easter vacation and you were having some trouble keeping order in your classroom. This would more likely happen
 - a. Because you weren't putting extra effort into keeping the students under control, or
 - b. because the students were more uncontrollable than usual.

14. If one of your students couldn't do a class assignment, would it be
 - a. because the student wasn't paying attention during the class lesson, or
 - b. because you gave the student an assignment that wasn't on his or her level?

15. Suppose you wanted to teach a series of lessons, but the lessons didn't turn out as well as you had expected. This would more likely happen
 - a. because the students weren't invested in learning about the subject, or
 - b. because you didn't put enough effort into developing the lessons.

16. Suppose a student who does not typically participate in class begins to volunteer his or her answers. This would more likely happen
 - a. because the student finally encountered a topic of interest to him or her, or
 - b. because you tried hard to encourage the student to volunteer his or her answers.

17. Suppose one of your students cannot remain on task for a particular assignment. Would this be more likely to happen
 - a. because you gave the student a task that was somewhat less interesting than most tasks, or
 - b. because the student was unable to concentrate on his or her schoolwork that day?

18. Suppose you were unable to devise an instructional system as requested by the principal, which would accommodate the "needs of individual students" in your class. This would most likely happen
 - a. because there were too many students in your class, or
 - b. because you didn't have enough knowledge or experience with individualized instructional programs

19. If the students in your class perform better than they usually do on a test, would this happen
 - a. because the students studied a lot for the test, or
 - b. because you did a good job of teaching the subject area.

20. When the performance of a student in your class appears to be slowly deteriorating, it is usually
 - a. because you weren't trying hard enough to motivate him or her, or
 - b. because the student was putting less effort into his or her school.

21. Suppose a new student was assigned to your class and this student had a difficult time making friends with his or her classmates. Would it be more likely
 - a. that most of the other students did not make an effort to be friends with the new student, or
 - b. that you were not trying hard enough to encourage the other students to be more friendly toward the newcomer?

22. If the student in your class performed better on a standardized achievement test given at the end of the year compared to students you had last year, it would probably be
 - a. because you put more effort into teaching this year, or
 - b. because this year's class of students were somewhat smarter than last year's.

23. Suppose, one day, you find yourself reprimanding one of your students more often than usual. Would this be more likely to happen
 - a. because that student was misbehaving more than usual that day, or
 - b. because you were somewhat less tolerant?

24. Suppose one of your underachievers does his or her homework better than usual. This would probably happen
 - a. because the student tried hard to do the assignment, or
 - b. because you tried hard to explain how to do the assignment.

25. Suppose one of your students began to do better schoolwork than he usually does. Would this happen
 - a. because you put much effort into helping the student do better, or
 - b. because the student was trying harder to do well in school?

Email Correspondences

The following message was sent to SBAE teachers in Southeast Missouri on March 28, 2018 to invite them to complete an instrument. It was forwarded to the same recipients on April 3rd as a reminder of the coming study.

Teachers,

I will have instruments for you to fill out at District CDEs Wednesday, Thursday, and Saturday of next week. This is for my Master's thesis project. I will need at least 45 responses. Your participation is completely voluntary and there are no ramifications if you choose not to participate. See the attached Participant Information Form to answer any additional questions you may have. Please consider taking at most 20 minutes of downtime during contests to fill out these instruments. Thank you for your time.

Non-respondents received the following email on April 9th and were directed to an electronic version of the instrument.

Dear _____,

Sorry I missed you at district contests. Would you please fill out this instrument for my Master's thesis project? Thanks so much!

<https://goo.gl/forms/9oavgFsYmsodaJzJ3>



PARTICIPANT INFORMATION FORM

Teacher Locus of Control and Self-Efficacy of Agricultural Educators in Southeast Missouri

You are invited to be in a research study of the personal and professional characteristics of agricultural educators in Southeast Missouri conducted by Jessica Toombs, a Master's student in Agricultural Education, under the direction of Dr. Rob Terry at Oklahoma State University. Your participation in this research is voluntary. There is no penalty for refusal to participate, and you are free to withdraw your consent and participation in this project at any time.

If you agree to be in this study, we would ask you to do the following things: Complete each of the three sections of the attached instrument by answering all questions honestly and with your first intuition. Time of completion is approximately 20 minutes.

Compensation: You will receive no payment for participating in this study. However, your input will assist researchers in better understanding the agricultural educators of Southeast Missouri.

Confidentiality: The information you give in the study will be anonymous. This means that your name will not be collected or linked to the data in any way. The researchers will not be able to remove your data from the dataset once your participation is complete. This data will be stored in a locked file cabinet until entered into a data analysis software on a password protected computer.

The research team will ensure anonymity to the degree permitted by technology. Your participation in this online instrument involves risks similar to a person's everyday use of the internet. If you have concerns, you should consult the instrument provider privacy policy at <https://www.qualtrics.com/privacy-statement/>.

Contacts and Questions: If you have questions about the research study itself, please contact Jessica Toombs at (816) 294-6572, jessica.toombs@okstate.edu. If you have questions about your rights as a research volunteer, please contact the OSU IRB at (405) 744-3377 or irb@okstate.edu.

If you agree to participate in this research, please complete the attached instrument.



Oklahoma State University Institutional Review Board

Date: 03/28/2018

Application Number: AG-18-19

Proposal Title: Teacher Locus of Control and Self-Efficacy of Southeast Missouri Agricultural Educators

Principal Investigator: Jessica Toombs

Co-Investigator(s):

Faculty Adviser: Rob Terry

Project Coordinator:

Research Assistant(s):

Processed as: Exempt

Status Recommended by Reviewer(s): Approved

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

The final versions of any recruitment, consent and assent documents bearing the IRB approval stamp are available for download from IRBManager. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be approved by the IRB. Protocol modifications requiring approval may include changes to the title, PI, adviser, other research personnel, funding status or sponsor, subject population composition or size, recruitment, inclusion/exclusion criteria, research site, research procedures and consent/assent process or forms.
2. Submit a request for continuation if the study extends beyond the approval period. This continuation must receive IRB review and approval before the research can continue.
3. Report any unanticipated and/or adverse events to the IRB Office promptly.
4. Notify the IRB office when your research project is complete or when you are no longer affiliated with Oklahoma State University.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact the IRB Office at 223 Scott Hall (phone: 405-744-3377, irb@okstate.edu).

Sincerely,

Hugh Crethar, Chair Institutional Review Board

A handwritten signature in black ink, appearing to read 'Hugh Crethar'.

VITA

Jessica M. Toombs

Candidate for the Degree of

Master of Science

Thesis: TEACHER LOCUS OF CONTROL AND TEACHER SELF-EFFICACY OF
SOUTHEAST MISSOURI AGRICULTURAL EDUCATORS

Major Field: Agricultural Education

Biographical:

Education:

Completed the requirements for the Master of Science in Agricultural Education at Oklahoma State University, Stillwater, Oklahoma in July, 2018.

Completed the requirements for the Bachelor of Science in Agricultural Education at University of Missouri, Columbia, Missouri in 2010.

Experience:

Taught agricultural education courses in grades nine through twelve at Sikeston Career and Technology Center and advised the Sikeston FFA chapter for seven years in Sikeston, Missouri.

Professional Memberships:

Area President and served on District Entomology and Meat Evaluation committees in the Missouri Vocational Agriculture Teacher Association

Member of National Association of Agricultural Educators

Served on District Insurance and Legislative Committees in Missouri State Teachers Association