Self-Efficacy of Early Career Agriculture Teachers and Its Relationship to Career Commitment and Job Satisfaction

by

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A dissertation submitted to the Graduate Faculty of
Auburn University
in partial fulfillment of the
requirements for the Degree of
Doctor of Philosophy

Auburn, Alabama
May 2, 2020

Keywords: Agricultural Education, Self-Efficacy, Career Commitment, Job Satisfaction

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Abstract

The purpose of this study was to describe the self-efficacy of Georgia early-career agriculture teachers and its relationship to job satisfaction and career commitment. The participants in this study were Georgia agricultural education teachers with five years or less experience teaching middle or high school agriculture. This descriptive and correlational study utilized a quantitative non-experimental survey research design. The data were analyzed using means, frequencies, standard deviations, t-tests, ANOVA, and regressions.

It was concluded that Georgia early-career agriculture teachers reflect the national trend in regards to their personal characteristics. Self-efficacy was lowest in the area of Supervised Agricultural Experiences, followed by classroom and laboratory, and finally FFA. Georgia early-career agriculture teachers have moderate levels of job satisfaction and career commitment. Older agriculture teachers and those with add-on certification had significantly lower levels of self-efficacy than other groups. The regression model developed showed an impact of classroom and laboratory self-efficacy on job satisfaction and career commitment.

Based on these findings, activities to increase self-efficacy in classroom and laboratory job responsibilities may increase career commitment and job satisfaction, ultimately leading to higher retention of agriculture teachers. Activities could include the opportunity to observe a successful teacher with a group of students that may be hard to work with or manage, developing relationships between new and experienced teachers that can provide encouragement and implementing reflective process before and after the student teaching apprenticeship.

Acknowledgments

This document would not be complete without the support of Dr. James Lindner. He has answered numerous questions throughout the process and has pushed, prodded, lead, guided, and directed me toward the final goal. Thank you Dr. Chris Clemons, Dr. Leane Skinner, and Dr. James Witte for serving on my committee. Your guidance through the process of research and coursework has been invaluable.

Thank you to my wife, Amy Atkinson, who has sacrificed an enormous amount of her own personal time and goals to allow me to complete this program. Thank you to the staff and administration at Washington-Wilkes Comprehensive High School and Treutlen High School who supported me and encouraged during this journey.

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FFA	National FFA Organization
SAE	Supervised Agricultural Experience

CHAPTER 1

INTRODUCTION

Agricultural education teachers are in high demand across the country. In 2018, state supervisors of agricultural education reported 61 full time and 10 part-time vacancies as of September 15th. Additionally, 868 teachers left the classroom with 677 of those being for reasons other than retirement (Smith, Lawver, & Foster, 2019). In Georgia, around 50 percent of agriculture teachers move or leave the profession within the first five years of their career (Thompson & King, 2013).

In order to fill the demand for agricultural education teachers and programs, new teachers must be trained and hired. Beginning teachers face many hurdles at the start of their careers. Mundt (1991), found that early career teachers faced problems such as organization, time-management, lesson planning, discipline, and planning for FFA events. Bandura (1994) suggested that an elevated sense of self-efficacy can combat the hurdles and setbacks that distinguish tough activities. As the need for agricultural education teachers grows, teachers with high levels of self-efficacy are needed to limit attrition and avoid burnout.

Problem Statement

Self-efficacy theory as a basis for research in agricultural education is a relatively recent development, with early work in the field being done by Rodriquez in 1997. Much of the research conducted has utilized the Teacher Self-Efficacy Scale (Hoy & Woolfolk, 1993) which is a measure of the three dimension of teaching efficacy y: (a) efficacy for instructional strategies, (b) efficacy for classroom management, and (c) efficacy for student engagement (Woolfolk Hoy, Hoy, & Kurz, 2008). While these three items are necessary skills for any agricultural education teacher, the total program of agricultural education also includes FFA and

SAE. Murray, Flowers, Croom, & Wilson (2011) found that agriculture teachers spend an average of 28.25 hours per week on classroom/lab and 8.78 hours per week on classroom prep. Their study additionally indicated that agricultural education work 56.95 hours a week on average, leaving 19.92 hours for tasks outside of classroom teaching and preparation. Wolf (2008) developed an instrument to measure teaching efficacy in classroom instruction as well as in FFA and SAE. This research described the self-efficacy of early career agriculture teachers and the perceived importance of using a Borich (1980) need assessment model. Knobloch and Whittington (2003) utilized the Teacher Self-Efficacy Scale as the dependent variable and career commitment as the independent variable. Blackburn and Robinson (2008) measured job satisfaction with Brayfield-Rothe Job Satisfaction index (1951) as modified by Warner (1973) in conjunction with the Teacher Self-Efficacy Scale. However, there is a lack of research combining teacher self-efficacy in the three component model of agricultural education with career commitment and job satisfaction.

Retention of agricultural education teachers continues to be a challenge for school systems across the country. Milner (2002) found that one in four early career teachers quit after the second year and nearly four out of ten leave within the first five years. Grant (2006) suggested that persistence as a personality trait may help teachers overcome burnout and continue in the profession. According to Tschannen-Moran, Hoy and Hoy (1998, p. 233), “efficacy influences teachers' persistence when things do not go smoothly and their resilience in the.face of setbacks”. Bandura's sources of efficacy provide a basis for understanding why some teachers persevere and others quit. One reason is a teacher's opinion of his own capabilities. A teacher who feels insufficient is unlikely to persist, while a teacher who feels sufficiently equipped to deal with stressful circumstances is more likely to persist. Bandura explained that

self-efficacy is developed through achievements and is reduced through failures. He suggested that the most important time for the improvement of self-efficacy is in the initial years of teaching. If teachers experience more failures than successes in the classroom early on in their career, they may leave. This makes self-efficacy as a factor for teacher retention a crucial component for research in agricultural education. Research priority 3 established by the American Association for Agricultural Education focuses on a sufficient scientific workforce (Graham, Arnold, & Jayaratne, 2016). This study aids in the answering of research priority question one: "What methods, models, and practices are effective in recruiting agricultural leadership, education, and communication practitioners (teachers, extension agents, etc.) and supporting their success at all stages of their careers?" (Graham, Arnold, & Jayaratne, 2016, p. 31). Turnover and burnout have a negative impact on human capital, which Graham, Arnold, & Jayaratne identify as a community's greatest asset.

Purpose and Objectives

The purpose of this study was to describe the self-efficacy of Georgia early-career agricultural education teachers and its relationship to personal characteristics, career commitment, and job satisfaction.

1. Describe the personal characteristics of early-career agriculture teachers in the state of Georgia.
2. Describe the self-efficacy of early-career agriculture teachers in the state of Georgia for each of the three components of the agricultural education model.
3. Describe the job satisfaction and career commitment for early-career agriculture teachers in the state of Georgia.

4. Describe the relationship between personal characteristics and self-efficacy for early-career agriculture teachers in the state of Georgia.
5. Describe the relationship between self-efficacy and job satisfaction and career commitment for early-career agriculture teachers in the state of Georgia.

Significance of the Study

The results of this study may demonstrate the areas of professional growth needed by early career agricultural education teachers in Georgia. State and regional agricultural education staff members can utilize the data to plan professional learning opportunities for early career teachers that focus on the job responsibilities most likely to reduce career commitment and job satisfaction.

Teacher educators may find this data useful in anticipating the needs of pre-service and modifying and enhancing current post-secondary curriculum and field experiences.

Definition of Terms

Agricultural Education - secondary agricultural education programs that instruct individuals in the food, fiber, and natural resource industry (Phipps et al, 2008)

Agricultural Teacher - a secondary-school instructor or teacher of school-based agricultural education (Phipps et al., 2008).

Experiential Learning - learning activities that involve the learner in the process of active engagement with, and critical reflection about, the phenomena being studied (Sweitzer & King, 2009).

FFA - an intercurricular student organization for those interested in agriculture and leadership. It is one of three components of agricultural education (National FFA Organization, 2016).

FFA Degree Program - levels of achievement that show progression through the phases of their leadership, academic and supervised agricultural experience development (National FFA Organization, 2018)

Proficiency Awards - honor FFA members who, through their SAEs, have developed specialized skills that they can apply toward their future careers (National FFA Organization, 2018)

Smith Hughes Act of 1917 - Provided funding for the teaching of vocational agriculture in public high schools (Osborne & Dyer, 1995).

Supervised Agricultural Experience - "the application of the concepts and principles learned in the agricultural education classroom in planned, real–life settings under the supervision of the agriculture teacher" (Talbert, Vaughn, Croom, & Lee, 2007, p. 418).

Three Component Model of Agricultural Education – Instructional model for agricultural education describing the interrelationships between FFA, SAE, and classroom and laboratory instruction (Phipps et al, 2008).

Limitations of the Study

Many of the items used in the instrument are based upon the Georgia Agricultural Education Program of Work which is used to evaluate all agriculture teachers receiving extended year and extended day funding. These standards are specific to Georgia and may not be applicable to other states.

Basic Assumptions

1. Teachers participating in this study are assumed to be full time agricultural education teachers in their first five years of teaching.

2. All teachers participating are aware of the three component model of agricultural education.
3. All respondents answer truthfully and correctly.

CHAPTER 2
LITERATURE REVIEW

Introduction

The purpose of this study was to describe the self-efficacy of early-career agriculture teachers in Georgia and its relationship with career commitment and job satisfaction.

This chapter establishes the context for the study by exploring the background of agricultural education including FFA and SAE. In addition there is discussion related to self-efficacy, social cognitive theory, the measurement of teacher efficacy, locus of control, and findings from previous studies related to agricultural educators.

Self-Efficacy

According to theorist Albert Bandura (1997), self-efficacy is defined as, "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (p. 3). Woolfolk (2007) applies this theory to teachers as teacher self-efficacy and rates it as one of the few attributes of instructors that correlates to student achievement. In agricultural education, McKim & Velez (2016) found two major themes in the teacher self-efficacy literature: The improvement of self-efficacy and teacher's perseverance in the profession.

Four areas emerged from the improvement of self-efficacy that match findings by Bandura (1977). The first area is mastery experience. McKim & Velez (2016) suggest that apprentice teachers may undergo a surplus of mastery experience, making them vulnerable to additional trials resulting in a decrease of self-efficacy. Second, vicarious experiences can build self-efficacy for preservice agriculture teachers. These experiences included observing a first-year teacher, a non-agriculture teacher, a student teacher, and a cooperating teacher (Wolf, Foster, & Birkenholz, 2010). Third, social persuasion had a positive impact on self-efficacy with written and verbal feedback from the cooperating teacher explaining the highest amount of

variance (Wolf et al., 2010). Finally, the area of physiological and emotional states identified by Bandura (1977) have not been researched in the field of agricultural education.

The second theme in the literature found by McKim & Velez (2016) is persistence in the profession. Career commitment and self-efficacy have a strong positive relationship even though agricultural education teachers see a wide range of difficult expectations and require high levels of self-efficacy in multiple fields.

Wolf (2008) created an instrument to measure teacher's sense of efficacy in three domains of agricultural education: classroom instruction, SAE, and FFA . Classroom and laboratory instruction are those activities that provide learning experiences within the confines of a school facility. (Talbert, Vaughn, & Croom, 2007). Supervised Agricultural Experience (SAE) is an independent learning program for students enrolled in agricultural education courses. It is designed to provide learning experiences for students in the agricultural career pathway of their choice. The FFA is an instructional tool that compliments both instruction and supervised agricultural experience. FFA programs are designed to encourage students to perform well academically (Phipps et al, 2008). Also measured was the perceived importance of each of these three areas. In a group of early career Ohio agricultural education teachers, the domain of SAE held the greatest discrepancy between its importance and the teacher's self-efficacy in that area. Many teachers believe SAE to be important, but their skills remain deficient. Teachers rated classroom instruction as the least important, and FFA as the most important. Additionally, teachers believed they were more capable of managing the FFA tasks as compared to others.

Hartfield (2011) compared the difference in teacher self-efficacy between novice and experienced Arizona agricultural education teachers. This study was done as a census, with all 93 Arizona agricultural education teachers included in the sample and a response rate of 76% was

obtained. Included along with classroom instruction, FFA, and SAE, was a fourth domain of content. The area of content was individualized to match the curriculum used by the Arizona Department of Education. FFA had the most self-efficacy and the highest perceived level of importance. Content reported the least amount of efficacy and received the lowest importance.

Another angle for explaining self-efficacy is culture shock and social connectedness. Langley, Martin, & Kitchel (2014) found that early career agriculture teachers sometimes suffer culture shock when teaching in a community due to perceived differences or distance from one to which they are accustomed. Novice teachers felt moderately connected to their new communities, though often reference their home agriculture programs in pedagogical coursework. The researchers found value in using culture shock to explain variance in self-efficacy, implying that cultural distance experience by a new teacher can affect their ability to achieve goals. Cultural distance was measured using items developed from Taft's (1977) outline of culture shock. Langley, Martin, & Kitchel (2014) recommended that teacher educators find strategies to prepare apprentice teachers for the move to new communities. An assortment of field experiences, purposeful assignments in student teaching, which securely allows the student to experience a different culture other than their own, and discussions helping teachers dissect why certain techniques may have worked in their home communities and others did not.

Social Cognitive Theory

Bandura (1986) proposed a theory that people are not reactive organisms, molded by outside environmental influences or driven by hidden instincts. He postulated that people are self-reflecting, self-regulating, and self-organizing. This is known as the social cognitive theory. Individuals function according to the interaction of personal, behavioral, and environmental factors. These three factors and their interactions create a triadic reciprocality. For example,

people's interpretation of their environment and cognitive events shape their behavior. Bandura labeled this as social cognitive theory instead of social learning to distinguish it from the social learning idea of the time and highlight the role that cognition plays in the ability of individuals to self-regulate and perform behaviors (Pajares, 2002).

Within Bandura's (2002) social cognitive theory, four primary abilities become important; symbolism, self-regulation, self-reflection, and vicarious capability. Symbolism allows humans the ability to learn through indirect events, including observing events sent in messages, building potential solutions, and assessing the projected results. Self-regulation is individual adaptation of behaviors. The amount that people self-regulate involves the accurateness and uniformity of their judgment, evaluation, and self-observation. Self-reflection invokes the generation of ideas and action or prediction on those ideas. Then, based on the results, thoughts are either validated or changed. Finally, vicarious capability is the ability of people to learn skills, social mores, and language through a variety of mediums, not only the consequences of response. This learning includes observing the action, retaining a memory, producing the action, and being motivated to continue the action by receiving positive results.

Teacher Self-Efficacy

Many measures have been taken to measure teacher self-efficacy. The earliest work was rooted in Rotter's social learning theory (Tschannen-Moran & Woolfolk Hoy, 2001). A study by the Rand Corporation (Armor et al., 1976) dedicated only two items to self-efficacy in a study of teacher characteristics and student learning. This initial work limited self-efficacy to whether control of the reinforcement of their actions lay with the teachers or with their environment. The researcher found that a teacher's belief in their own ability was significant in the teacher's success to teach reading to minority students in an urban school. Teacher self-efficacy was

additionally a strong prediction of continued use of federal project materials and practices after a program had ended (Berman et al, 1977).

Beyond Rotter's social learning theory, Bandura's social cognitive theory was applied to the growing research area in self-efficacy. Social cognitive theory yield another type of expectation, outcome expectancy, which is different from efficacy expectations. An efficacy expectation is the person's belief that he or she can complete the necessary actions to perform a given task, while outcome expectancy is the person's evaluation of the likely consequences of doing that task at the predicted level of competence (Bandura, 1986).

Ashton, Burr, and Crocker (1984) used a series of vignettes to determine if self-efficacy was content specific. A situation was presented and the teacher was how effective they would be in that situation on a scale of "extremely ineffective" to "extremely effective" and compare themselves to other teachers on a scale of 'much less effective than most teachers'' to ''much more effective than most teachers.'' Researchers also asked respondents their level of stress during each scenario, but no correlation was found between efficacy and stress.

Gibson & Dembo (1984) developed the teacher efficacy scale (TES), a 30 item measure of teacher efficacy. The researchers proposed that their two factor measure reflected Bandura's two expectancies of social cognitive theory, self-efficacy and outcome expectancy, theorizing that outcome expectancy would reflect the amount that the environment can be controlled, while self-efficacy would be the teacher's assessment of their ability to cause positive change in their students. Other work using the TES has cast doubt on the effectiveness of the measure with other researchers narrowing the items to 16 (Soodak & Podell, 1996) or 10 (Hoy & Woolfolk, 1993).

Teacher efficacy has been defined as both context and subject-matter specific. A teacher may feel very competent in one area of study or when working with one kind of student and feel

less able in other subjects or with different students (Tschannen-Moran & Woolfolk Hoy, 2001). Science educators have done extensive research on the effects of efficacy on science education. Riggs and Enochs (1990) constructed an instrument, based on the work of Gibson and Dembo, to measure the efficacy of teaching science the Science Teaching Efficacy Belief Instrument (STEBI). As with Gibson and Dembo the researchers discovered two separate factors, one called personal science teaching efficacy (PSTE) and a second factor named science teaching outcome expectancy (STOE).

To extend self-efficacy to classroom management, Emmer & Aussiker (1990) adapted the Gibson and Dembo instrument, constructing a 36 item measure with three subscales: efficacy in classroom management and discipline, external influences, and personal teaching efficacy. When measured with preservice teachers and apprentice teachers, results indicated that classroom management/discipline efficacy is distinct from other types of teacher efficacy.

Roudenbush, Rowen, and Cheong (1992) developed a short measure of teacher efficacy that applied to all teachers. Their measure asked teachers a single question, "To what extent do you feel successful in providing the kind of education you would like to for this class?" (Roudenbush et al., as cited in Tschannen-Moran et al., 1998). Participants answered this question on a four-point summated scale. After evaluating the existing teacher self-efficacy tools, Bandura presented another measurement, called the Teacher Efficacy Scale, in 1997. This scale contained 30 items that were measured on a nine-point summated scale, and the scale contained seven subscales, which were as follows: (a) efficacy to influence decision making, (b) efficacy to influence school resources, (c) instructional efficacy, (d) disciplinary efficacy, (e) efficacy to enlist parent involvement, (f) efficacy to enlist community involvement, and (g) efficacy to create a positive school climate (Bandura, 1997). Bandura suggested that his approach provided

an opportunity to determine teacher efficacy by assessing teacher capability over a broad range of tasks and would result in a more all-inclusive measure of teacher self-efficacy. He also warned that the issue with more detailed measures of teacher self-efficacy was their limited focus. Bandura expressed concern that the predictive power of the measures would not be valid for anything other than the skills being measured (Bandura, 1997).

Following Bandura's (1997) scale, another teacher self-efficacy measurement scale was developed by Tschannen-Moran et al. in 1998. Their model was the Ohio State Teacher Efficacy Scale (OSTES) and contained 52 items, and was tested in three different studies. The quantity of items was reduced for the second and third studies to 32 and 18 items, respectively. The 18 items remaining for the third study were developed and tested and the final results of the tests led to an instrument with two forms: a long form that had 24 items and a short form with 12 items (Tschannen-Moran & Woolfolk-Hoy, 2001). The researchers claimed this measure was preferable to its forerunners because it could evaluate a wide range of skills that are important to good teaching without being too specific (Tschannen-Moran & Woolfolk-Hoy, 2001).

Though there seems to be a positive correlation between teacher efficacy and a number of other factors, some researchers disagree on the definition of teacher efficacy and believe that teacher self-efficacy is too complicated to be gathered into one term (Woolfolk et al., 1990). Bandura (1997) stated that teacher efficacy is multifaceted and is above and beyond a teacher's ability to teach content. Teacher efficacy also combined the teacher's sense of his or her ability to manage the classroom, gather needed resources, involve parents in academic activities, and counterbalance outside influences. Teacher self-efficacy is condition specific and changes based on the schools, community, available resources, student population, and

administrative leadership (Ashton & Webb, 1986; Goddard, Hoy, & Hoy, 2000; Tschannen-Moran & Hoy, 2007).

Teacher Locus of Control

Locus of control is the degree that people control results and consequences in their lives in opposition to the control of external forces and circumstances. Locus of control is typically measured on an internal-external scale. To the range that a person's locus of control is external, he/she will tend to perceive control as being the result of others, fortune, and events beyond personal control. Internal locus of control is tied to an individual's view of having more control over life circumstances as well as personal role in the outcomes of those circumstances. (Monshi Toussi and Ghanizadeh, 2012) Teacher locus of control refers to teachers' discernments of control or responsibility for student success. Previous research has thoroughly shown that teaching effectiveness is positively linked to teachers' internal tendencies (e.g. Shermen & Giles, 1981; Findley & Cooper, 1983). Rose and Medway (1981) indicated that internal teachers tended to produce higher achieving students by engaging students in more appropriate on-task behavior resulted from executing a more controlled learning context.

Lefcourt (1982) and Spector (1982) both determined that locus of control may be an important personality variable in understanding teachers and their roles in the classroom. Based on this understanding, teacher locus of control has been examined in relation to motivation (Czubaj, 1996) in which internal locus of control leads to intrinsic motivation. Teachers with internal locus of control have more positive job attitudes (Cheng, 1994). Stress is negatively correlated with internal locus of control for student success and self-efficacy (Parkay, Greenwood, Olejnik & Proller, 1988)., Self-efficacy has been shown to have a moderate positive correlation with locus of control (Anderson et al., 2005; Senior, 2002).

Sadowski & Woodward (1983) found an indication of a moderate relationship between teachers' locus of control and students' perception of classroom climate.

Smith (1997) wrote that internal locus of control orientated preservice teachers tend to be less anxious, more successful and more reflective. Additionally, external locus of control orientated pre-service teachers have more negative attitudes toward the teaching profession (Bedel, 2008).

Agricultural Education Teacher Self-Efficacy

In the field of agricultural education, self-efficacy research has mirrored the greater field of study with a dual focus on development as well as outcomes related to teacher's self-efficacy. Rodriquez (1997) conducted early research of self-efficacy on agricultural education teachers in Ohio, showing learning style having a moderate negative association with personal teaching efficacy. A two factor scale of personal teaching efficacy (PTE) and general teaching efficacy (GTE) from the teacher efficacy scale (TES) was utilized and second year teachers had the lowest self-efficacy (Tschannen-Moran & Woolfolk Hoy, 2001).

Much work has been conducted on pre-service undergraduate teaching candidates as well as students who are completing their student teaching practicum. Knobloch (2001) used the Woolfolk and Hoy (1990) instrument to measure undergraduate teaching candidates. This instrument utilized a two-factor scale (PTE and GTE) in the measurement approach. This study looked primarily at the impact of peer teaching and early field experience on teacher efficacy, which the findings indicated that peer teaching and early field experiences increase teacher self-efficacy by developing a sense of mastery after being instructed on how to teach (Knobloch, 2001).

Swan (2005) found that student teachers' self-efficacy decreased during student teaching and that teacher's self-efficacy was related to career intent. However, learning style made no difference in self-efficacy. Self-efficacy could explain 17% of the variance in career intent.

Knobloch and Whittington (2003) studied the influence of the first ten weeks of school teacher efficacy development in first, second, and third year teachers. The researchers used an instrument developed using Bandura's (1997) self-efficacy theory and Darling-Hammond's (1999) review of effective teacher features. Apprentice teachers were the only group that showed an increase in teacher self-efficacy in the first ten weeks of their apprentice teaching experience. First year teachers had the greatest drop in their self-efficacy over the ten-week period, however there was virtually no change in teacher efficacy during the same time period for the other groups. During the first ten weeks of school, self-efficacy has been shown to increase for apprentice teachers and decline for first-year agricultural education teachers (Knobloch and Whittington, 2003).

Knobloch (2006) found no increase in self-efficacy among apprentice teachers from two institutions over the course of their placement, but that could be due to increased efficacy during student teaching because of vicarious experiences with a supportive supervising teacher. The Researchers found that one group of students' perceptions of their teacher preparatory program were related to their teacher efficacy. Apprentice teachers at one school found principals in their schools were supportive and that the supervising teachers were more competent.

In examining a cohort of apprentice teachers, Roberts, Harlin, and Ricketts (2006) saw a U-shaped pattern in their levels of self-efficacy with an increase in the beginning, a low point in the middle, and an increase at the end of their experience. The TSES instrument was used to measure teacher efficacy. The student teaching semester consisted of four weeks on campus and

eleven weeks in the host school. Data was taken at four points during the fifteen-week experience.

Roberts, Harlin and Briers (2008) researched the influence of placing two student teachers in the same school at the same time on self-efficacy development. Some sites hosted single student teachers and other sites hosted a pair of student teachers. This study was guided by Bandura's (1997) Model of Triadic Reciprocality and self-efficacy theory. Data was collected at three points using TSES (Tschannen-Moran & Woolfolk Hoy, 2001) to measure teacher efficacy. It was concluded that student teachers who begin the field experience effacious about teaching ability, become less effacious toward the middle of the experience, and rebound to higher levels of efficacy at the end of the experience. This is similar to the U-shaped pattern found by Roberts, Harlin, and Ricketts (2006). Among preservice and student teachers, self-efficacy increased after a teaching methods course and after apprentice teaching. Preservice teachers had higher self-efficacy in the instructional strategies and classroom management and lower self-efficacy in student engagement. (Stripling, Ricketts, Roberts, & Harlin, 2008).

Wolf, Foster, and Birkenholz (2008) related the self-efficacy of pre-service teachers and their professional experiences and perception of preparation. The researchers used TSES (Tschannen-Moran & Woolfolk Hoy, 2001) with questions added to assess professional activities using Borich (1980) needs assessment model. This study used an alternative ways to measure efficacy that was specific to agricultural education. The study showed high levels of self-efficacy at the end of the student teaching experience with the highest self-efficacy in classroom management and least effacious in student engagement.

Wolf, Foster, & Birkenholz (2010) saw an increase in self-efficacy among student teachers who observed another student teacher or a novice teacher in comparison to an

experienced teacher. Student teachers reported high levels of teacher self-efficacy at the end of the experience. The student teachers' perception of their level of preparation was similar to their sense of teacher self-efficacy.

Early Career Teachers

Novice teachers has also been found to be efficacious at the end of the school year, with factors influencing self-efficacy only include the number of classes that the teachers prepare for each day and the perceived quality of the student teaching experience (Whittington, McConnell, & Knobloch, 2006). Knobloch and Whittington (2002) propose that early career agriculture teachers have higher self-efficacy and confidence if they receive positive feedback, direction, and encouragement from their students, peers, administrators, parents, and community members. This study utilized the Ohio State Teacher Efficacy Scale (TSES) (Tschannen-Moran & Woolfolk Hoy, 2001). Beginning with apprentice teaching and continuing through the third year of full time classroom teaching, Swan, Wolf, & Cano (2011) saw the highest levels of self-efficacy after student teaching and the lowest levels after the first year of teaching with a slight increase after the second year.

In a study of traditionally versus alternatively certified agriculture teachers, similar levels of self-efficacy were found, however the researchers postulate that the differences could be due to a lack of formal training from the alternatively certified teachers who do not realize their deficiencies (Rocca & Washburn, 2006). In opposition, Ricketts and Duncan (2008) saw higher levels of self-efficacy among traditionally certified teachers in areas including technical content knowledge, conducting FFA activities, leadership development, SAE activities, and in managing the agricultural education program. This study used a modified Borich (1980) needs assessment

with constructs of technical agriculture content, FFA/Leadership Development/SAE, teaching and learning, and program management.

Hamilton and Swortzel (2007) utilized the Science Teaching Efficacy Belief Statement developed by Riggs and Enochs (1990) to determine the self-efficacy of teaching science among agricultural and environmental science and technology (AEST) teachers in Mississippi. A high self-efficacy was found among teachers, however there was a negate correlation between self-efficacy and the capactity to teach integrated process skills. Wolf (2008; 2011) utilized a agricultural education specific instrument along with a Borich (1980) needs assessment to determine the self-efficacy and importance of agricultural education job-related tasks. The researcher found the highest level of perceived efficacy found in the classroom domain and the lowest sense of efficacy in the SAE domain. FFA was perceived by the participants as the most important of the three components and classroom/laboratory as the least important.

Blackburn and Robinson (2008) described the levels of teacher self-efficacy and job satisfaction and tried to determine a relationship between the two. The population for this study was agricultural education teachers who have taught six years or less. The TSES (Tschannen-Moran & Woolfolk Hoy, 2001) was used to measure total teacher efficacy. The findings indicated that these early career teachers were effacious and satisfied with teaching. They had the highest self-efficacy in classroom management and lowest self-efficacy in student engagement.

Aschebrener, Garton, and Ross (2010) used a modified version of Working with Diverse Students: The General Educator's Perspective (Brownell & Pajares, 1999) to measure the self-efficacy of Missouri agriculture teachers toward working with students with special needs. Early career agriculture teachers indicated that administrative support was most helpful when working with students with special needs, while trainings focused on students with special needs was not

helpful. Self–efficacy was the strongest predictor of self–perceived success toward teaching students with special needs.

In a population of first and fifth year Texas agricultural education teachers, Burris, McLaughlin, McCulloch, Brashears, and Fraze (2010) utilized the TES (Woolfolk & Hoy, 1990) and researcher developed items on agricultural content. Personal teaching efficacy was higher than general teaching efficacy in both groups, while both types of efficacy were slightly higher in the fifth year teachers. The content area of agricultural mechanics was moderately higher in efficacy among fifth year teachers (Burris et al., 2010).

McKim, Velez, and Clement (2017) utilized items from a variety of self-efficacy scales ((Tschannen-Moran & Woolfolk Hoy, 2001; Simonsen, Velez, Birkenholz, & McKim, 2013; (Riggs & Enochs, 1990; Woolfolk Hoy, 2000) to measure self-efficacy in classroom management, instructional strategies, leadership, science teaching, and math teaching. Significant positive relationships were found between number of teachers in the program and instructional strategies, leadership, and science teaching self-efficacy. Years of teaching experience, number of students in the program, science credit being offered, and CASE certification were also positive predictors of self-efficacy in various areas.

Using the same measures of self-efficacy, McKim & Velez (2017) determined their relationship with the teacher development experiences of preservice coursework, student teaching, and professional development. Student teaching was found to be the most impactful experience toward developing self-efficacy in classroom management, instructional strategies, leadership, science teaching, and math teaching.

Job Satisfaction

Job satisfaction has been the most commonly investigated factors in organizational behavior (Spector, 1997). Job satisfaction varies and researchers have suggested that the higher the prestige of the job, the greater the job satisfaction. Many workers, however, are satisfied in even the least prestigious jobs. That is, they simply like what they do. In any case, job satisfaction is as individual as one's feelings or state of mind (Azhar & Asdaque, 2011).

Multiple factors have been found to positively correlate to job satisfaction while others related more strongly to job dissatisfaction. Mortimer & Lorence (1979) observed that there is no consistent agreement among researchers about the importance of job characteristics and experiences. A survey of the literature shows that most studies have focused on individual distinctions such as age, education, gender, and occupational level as determinants of job satisfaction (Fournet, Distefano, & Pryer, 1969). Herzberg, Mausner, Peterson, and Capwell (1957) represented job satisfaction with a U-shape over the course of a career. According to the researchers, job satisfaction with younger employees is initially high, goes down after a few years, and rises as workers age. Among teachers, Perie and Baker in the 1997 report Job Satisfaction Among America's Teachers: Effects of Workplace Conditions, Background Characteristics. and Teacher Compensation, found that elementary and secondary teachers under 30 had higher levels of job satisfaction than their older coworkers.

Research associating salary and job satisfaction have shown varied results. Although the effects of salary on job satisfaction are among the most frequently reported indicators of job satisfaction, correctly determining its association is complicated by factors such as age, occupational level, and education (Fournet, Distefano, & Pryer, 1969). In a study of job satisfaction in a Mississippi county found that many educators were not satisfied with compensation in salary and benefits (Jennings, 2001). Perie and Baker (1997) also found that

teachers earning a salary less than $25,000 per year had a higher number reporting satisfaction than their fellow teachers who received higher compensation. In a study of 1,969 teachers, Carraher and Buckley (1996) found that intellectual intricacies could account for different ways individuals conceptualize satisfaction with pay.

The ability to advance upwardly in a career has not been found to significantly affect job satisfaction. Herzberg, Mausner, Peterson, and Capwell (1957) found that advancement was more likely to be a reason of job dissatisfaction than satisfaction. Several researchers have looked at teacher gender as a variable for teacher job satisfaction. Some studies have found that female teachers were less satisfied with their jobs than male teachers (Bishay, 1996; Mwamwenda, 1997), especially when teachers felt unsupported in their role by administrators and colleagues (Kim & Yang, 2016). Contrarily, other research reported that female educators have higher job satisfaction than their male counterparts (Michaelowa, 2002; Spear, Gould, & Lee, 2000) when allowed to exert freedom in making decisions in their classrooms (Fenech, Sumsion, Robertson, & Goodfellow, 2008). Further, Other studies have found no distinction between males and females as related to job satisfaction (Gosnell, 2000; Sargent & Hannum, 2005).

Dinham and Scott (1998) found that educators who have the highest level of satisfaction with their job are those who have been able to keep in contact with former students and develop a network of relationships and community over time. When a teacher can make a friendly relationship with a former student and their family, the educator feels as if a lifelong difference has been made in that student's life thereby increasing overall job satisfaction. Previous studies have also found that teachers' sense of efficacy is related to their happiness with their choice of career and their ability as rated by school superintendents (Trentham, Silvern, & Brogdon, 1985).

Recent findings have shown that teachers' self-efficacy play a critical role in maintaining their commitment to their school and their job satisfaction (Caprara, Barbaranelli, Borgogni, Petitta et al., 2003; Caprara, Barbaranelli, Borgogni, & Steca, 2003).It is likely that job satisfaction has a positive correlation with teachers' self-efficacy and helps to maintain their attempts to help students obtain their academic goals. In a study on over six thousand American educators, salary satisfaction is positively related to academic performance measured at the school level (Currall, Towler, Judge, & Kohn, 2005).

Much work has been done on the job satisfaction of agriculture teachers. In a comparison of agriculture teachers and young farmers, teachers who were not enrolled in a high school agriculture class had less job satisfaction (Claycomb & Stewart, 1980). Interpersonal relationships, policy and administration, and salary have been shown to be job satisfiers (Bowen, 1981; Kotrlik & Malek, 1986). Grady (1985) found that factors such as job security, salaries, administration, and working conditions contributed to a majority of the variance in job satisfaction among Louisiana agriculture teachers, while school setting and enrollment had no effect. In addition, Boone and Boone (2007) found that student-centered teachers, those desiring to educate students in agriculture and help students achieve in FFA were also motivated to remain in the profession. Salary, job location, and support from administrators impacted teacher motivation as well. Accordingly, Jewell, Beavers III, Malpiedi, and Flowers (1990) found that agriculture teachers were generally satisfied with intrinsic job satisfiers versus extrinsic job satisfiers. Walker et al. (2004) discovered that job satisfaction was greater among agriculture educators who remained in the profession, hypothesizing that maturity and acclamation to job responsibilities were correlated to increased satisfaction. The researchers also reported that agriculture educators who stayed in the classroom may have reached a plateau in their career,

leading to energy conserving behavior and complacency making them neither satisfied nor dissatisfied.

District and school administration support, financial backing, and support of colleagues contributes to the job satisfaction of early career teachers (Hasselquist, Herndon, & Kitchel, 2017). Blackburn, Bunch, and Haynes (2017) found a strong relationship between total teacher self-efficacy and job satisfaction, revealing if a teacher has a higher level of self-efficacy, they will be more satisfied with their job. Other factors that can explain job satisfaction include a collegial environment and level of education (Thobega & Miller, 2003). Job satisfaction has also been shown to have a slight negative correlation to burnout, a phenomenon of physical, mental, and emotional exhaustion (Chenevey, Ewing, & Whittington, 2008).

However, job satisfaction is controlled by more than just working conditions; it also includes family characteristics such as marital satisfaction and the conflict between parental and professional responsibilities (Odell, Cochran, Lawrence, & Gartin, 1990). Job satisfaction as it relates to family reasons, especially among female agriculture teachers, has been found to be low in previous studies (Foster, 2001).Work-Family balance, one's ability to manage their roles of both work and home, has been shown to have significant positive relationship with job satisfaction (Sorensen & McKim, 2014; Sorensen, McKim, & Velez, 2016). In a study of agriculture teachers in six states, teachers who compared themselves to others and felt feelings of inferiority had less job satisfaction (Kitchel et al, 2012). Watson and Hillison (1991) found that job satisfaction can varied by Keirsey temperament type among West Virginia agriculture teachers. In an attempt to increase job satisfaction, Ritz, Burris, and Brashears (2013) found a professional development on time management had no impact on job satisfaction. Ultimately, teachers' self-efficacy is closely related to teacher job satisfaction and is directly related to

teacher intrinsic needs of competence and knowledge in their area of expertise (Ryan & Deci, 2000).

Career Commitment

Teacher commitment is a crucial factor in determining results for teachers. It has been shown to be a predictor of teachers leaving the profession and missing work. (Day, 2008; Day, Elliot, & Kington, 2005), A lack of commitment has also been linked to teacher stress and burnout as a. Furthermore, teachers with lower levels of commitment make less effort to improve the quality of their instruction (Firestone, 1996). Hopkins and Stern (1996) explained that commitment keeps teachers engaged in their work and improve their self-confidence. Teacher commitment also impacts students through increased student attention, achievement, and confidence. (Bryk & Driscoll, 1988; Firestone, 1996)

Two types of teacher commitment include professional commitment and organizational commitment. Professional commitment refers to the amount of connection that a teacher has toward the teaching career in general (Coladarci, 1992). According to Mowday, Steers, & Porter (1979), organizational commitment is dependent on the person's acceptance of the organization's goals and values, their motivation to support the organization, and the eagerness to remain a a part of the organization. Teachers with high organizational commitment may work harder to improve the school and are more likely to remain at the same school (Park, 2005).

In agricultural education, Knobloch and Whittington (2003) conducted initial research into the relationship between career commitment and teachers' self-efficacy among agricultural teachers. This study was conducted using pretest and posttest questionnaires in which the teacher efficacy instrument used was the TSES (Tschannen-Moran & Woolfolk Hoy, 2001). After the pretest the teachers were split into two groups based on their scores for career commitment using

a researcher developed measure. The teachers were surveyed again after ten weeks and the teachers in the group of higher career commitment had higher self-efficacy at that point. Contrarily, the other group with lower scores of career commitment had lower levels of self-efficacy after ten weeks of school. This research began the understanding of a positive relationship between self-efficacy and career commitment among agriculture teachers. Further research into the relationship between agriculture teachers' perceived self-efficacy and career commitment showed positive relationships between the two variables. Wheeler & Knobloch (2006) also showed the positive influence of career commitment on self-efficacy, while teaching experience was negatively correlated with self-efficacy. Swan (2005) investigated teachers' self-efficacy and career commitment of student teachers at The Ohio State University. Swan determined that 17% of the variance in career commitment could be credited to the self-efficacy of these apprentice teachers.

The Development of the Integrated Three-Component Model of Agricultural Education

Agricultural education incorporates a unique, three component model of education. The three components include formal instruction, FFA, and supervised agricultural experience. These components are, ideally, equally important and take up equal amounts of time for the student and the instructor. (Phipps et al, 2008) Croom (2008) seeks out the historical origin of this three component model.

After the passage of Morrill Act in 1862, agricultural knowledge began to be dispersed from the land grant universities. Public school agricultural education began slowly in different states with several schools in the northeast offering agriculture courses before the turn of the twentieth century. By the time the Smith-Hughes Act was passed in 1917, 30 states were offering course in agricultural education (Croom, 2008).

The supervised agricultural experience (SAE) was pioneered by Rufus Stimson. Stimson developed the home project for his agricultural students and "proposed that projects must be on a farm and be completed under specific learning conditions with measurable results" (Croom, 2008, p. 114). Today the SAE can be conducted at home or at school, as a business or at a place of business. Research projects related to agriculture can also be a part of a student's SAE (Phipps et al, 2008).

The National FFA Organization was founded in 1928 and grew quickly to become a part of agricultural student's experience. In 1950, FFA was given a federal charter to reduce liability for school boards and integrate it into the classroom (Croom, 2008)

The origin of the three component model has no concrete beginnings. Agricultural education teacher training books as early as 1938 identified SAE projects and classroom work as parts of the total program, but did not include FFA. By 1947, FFA was included as an integral part of the model for agricultural education. Some of the earliest examples of the three-ring Venn diagram for agricultural education come in the 1975 FFA Advisors handbook (Croom, 2008).

Recent legislation has brought legitimacy to the three component model of agricultural education. On a national level, the Public Law 116-7 summarizes the purpose of National FFA including "focusing on the complete delivery of classroom and laboratory instruction, work-based experiential learning, and leadership development (National FFA Organization's Federal Charter Amendments Act, 2019, p. 2). In the state of Georgia, a bill designed to introduce elementary agricultural education to the state's Quality Based Education Act also included wording that any local school system with an agricultural education shall include all three components of SAE, FFA, and classroom instruction (Green Agricultural Education Act, 2017).

Secondary Vocational Agriculture Curriculum from 1890 to 1980

Today's agriculture students have their choice of over 40 different courses ranging from aquaculture to agricultural electricity and electrical controls. Much of today's coursework focuses on agricultural literacy and skills that can be used in careers related to agriculture. This is a major change from the early days of agricultural education before and after the Smith-Hughes Act.

The initial thrust for agricultural education curriculum in secondary schools came from land grant colleges. Many of these universities were teaching remedial course in agriculture in order to prepare students for college agriculture courses. The suggested course of study for high school students included agronomy, zoology, dairying, rural engineering, and rural economy. Many high school students in the 1890s had the option of completing a classical course of study or an agricultural course of study. This agricultural course of study would include core academic classes along with agricultural course each year. In many schools, agriculture was only offered in the 9th and 10th grades as many students dropped out after that point. This trend continued well into the 1930s. This method of curriculum that included standalone courses of study leading to collegiate agriculture courses became known as the traditional method (Moore & Borne, 1986).

The passage of the Smith-Hughes Act in 1917 brought many to agricultural education and its curriculum. One of the first major changes to curriculum was an emphasis on occupational analysis. Stimson (1922) was a major advocate of occupational analysis. He argued that curriculum should be based in the occupation for which it was preparing students. A curriculum expert of the day, W.W. Charters agreed with Stimson and advocated using job analysis as the basis for curriculum, giving examples of sheep husbandry and farm shop (Moore & Borne, 1986).

The other major change was a step away from the traditional method of curriculum development. The cross section method was a departure from the tradition of one year of crops and another of animal husbandry. This new method would teach skills and knowledge from each enterprise each year, with difficulty increasing as the students progressed through the grades.

Supervised Agricultural Experience

During the early 1900s agricultural education teaching methods consisted of lecture and physical skill labor training on the school farm (Stimson, 1915; Stimson, 1919). Stimson believed that the skills and abilities that were taught in agriculture classrooms could not be taught by merely books and observation. On the other hand, Stimson believed that practical instruction approaches needed to be included to ensure that students developed an understanding of the fiscal and marketable application of the lesson. Stimson (1919) supposed that most schools were far from being able to support all of their educational practices on school grounds. However, in the early 1900s all of the requirements for promotion were realized within the school grounds. During this time, agricultural instructors had little understanding of the settings of a student's farm. Therefore, Stimson suggested that students should utilize their farms, or local farms close to the school to hone skills. Further, Stimson believed that the school's primary aim should be to focus on building connections between the classroom content taught to students and their experiences on their home or assigned farm. This idea was called the project method (Stimson, 1915; Stimson, 1919). The foundation of the project method were that of an instructional procedure used to develop student skills and competencies (Stimson, 1915; Stimson, 1919). Stimson defined a project as a job that should be completed on a farm and involves the use of equipment and resources to accomplish a specific goal that will enhance the educational process. Students that completed projects were expected to utilize their home farms

to further their learning within agricultural education. Each project was designed to be hands-on and an application of classroom lessons. Students were expected to keep financial records and track time in order to show progress on their project. Stimson believed that recordkeeping was needed for students to further develop their knowledge in the field. Three main forms of projects were completed by students: improvement, trial, and production projects. An improvement project was conducted to better the facilities or working environments. Trial projects were used for students to try new animals, plants, or techniques to enhance their production. Finally, production projects were used for students to produce a specific crop for market. Agriculture students completed at least one project with records in each category prior to graduation (Stimson, 1915; Stimson, 1919). Stimson (1919) stated that student projects should increase in difficulty, scope, and sequence each year. Families found that the projects that were completed assisted farmers in experimenting with new crops and techniques that had been proven successful in other locations. Stimson found that parents had a positive perception of the agricultural instructor, due to their ability to assist students in transferring knowledge from the classroom directly to their family farm. Further, Stimson alleged that student-parent interaction formed a relationship that proved essential in the operation of the farm. Finally, Stimson (1919) posited that an agricultural educator had a distinct role in the success of the project method. Heald (1929) reported that since agriculture teachers were employed through the summer, Stimson required a weekly visit to each student's farm. Additionally, teachers were expected to complete mid-summer and midwinter professional development. Professional development was devoted to assisting 39 teachers in fostering teamwork in their classrooms and communities (Heald, 1929). Stimson (1919) identified teamwork as a vital component of the project method. Since the conceptualization of the project method, several changes have occurred in the

utilization of these projects (Phipps et al., 2008). The project method has endured several name changes that have, in turn, broadened the scope of SAE programs. These name changes included: home-school cooperation plan, farming project, productive farm enterprise, supervised farm practice program, supervised farming program, supervised occupational experience program, and supervised agricultural experience program (Phipps et al., 2008). Further, the categories of SAE projects have been changed and broadened to include a larger portion of the agricultural industry (Phipps et al., 2008). The current category types are as follows: entrepreneurship, placement, research, and exploratory. Entrepreneurship SAEs are utilized to prepare students to own and operate an agricultural business or facility (Phipps et al., 2008). Placement SAEs are used when a student is employed by someone. Students who are engaged in a placement SAE can be paid or can volunteer (Phipps et al., 2008). Newcomb et al. (2004) stated that placement SAEs can be completed both after school and during the school day. Within the last 20 years, research and exploratory projects have been established as SAE categories (Phipps et al., 2008). Research SAEs should have a strong emphasis in agriscience and build on student's interest within the agricultural industry. An experimental research SAE allows a student to conduct relevant and interesting research to develop new information and further the student knowledge of the topic and scientific process. Meanwhile, exploratory SAEs are designed to provide students with the opportunity to further learn about an agricultural career. Students who complete an exploratory SAE collect relevant information from various sources to develop a firm awareness of a particular agricultural career of interest. Phipps et al. (2008) stated that exploratory SAEs can be enhanced when partnered with a placement, ownership, or research program to further support a student's interest in a specific agricultural career. Roberts and Harlin (2007) posited that agricultural education profession should move away from the utilization of SAE programs and

reexamine Stimson's original conceptualization of the project method. The agricultural education profession has utilized the term "program" to describe a multi-year and singularly focused SAE (Roberts & Harlin, 2007). Phipps et al. (2008) stated that teachers should assist students in the development of a multi-year program that builds in scope, sequence and difficulty. Roberts and Harlin (2007) postulated that the utilization of programs has limited student involvement in SAE and that a conceptual change to projects could produce higher participation rates in students.

Preservice Teachers' Perceptions of SAE

Robinson, Krysher, Haynes, and Edwards (2010) examined how Oklahoma State University preservice teachers spent their time during their student internship. Robinson et al. found that all preservice teachers were afforded the opportunity to supervise SAE programs during their student teaching. However, the researchers reported that preservice teachers who completed their student teaching in the spring spent 30 minutes more a week supervising SAE programs than preservice teachers who conducted their student teaching in the fall. Finally, Robinson et al. recommended that preservice teachers experience a wider variety of SAEs during their student internships.

Beginning Teachers' Perceptions of SAE

Wolf (2011) conducted a descriptive study of Ohio beginning teachers' self-efficacy of teaching agriculture. The researcher found that beginning teachers were least efficacious in the SAE component of agricultural education. Therefore, Wolf recommended that more emphasis should be placed on SAE in agriculture teacher preparation programs. Finally, the researcher found that teachers who were not an agricultural education student in high school had a lower teacher self-efficacy in SAE.

Inservice Teachers' Perception of SAE

Swortzel (1996) conducted a study that examined Tennessee agriculture teachers' awareness of SAE programs. Swortzel found that teachers have relatively positive perceptions of planning and supervision practices. It was found that multi-teacher programs and teachers that grade SAEs have higher perceptions of planning. Also, Swortzel found that teachers had a higher sensitivity of supervision if they graded SAE programs, were given paid hours for supervision, and were not agricultural education students in high school. Leising and Zilbert (1985) examined factors that influenced California agriculture teachers' utilization of SAE programs. They found that student involvement was influenced by a grading the SAE and requiring its completion. They recommended that policies be developed to encourage agriculture teachers to have 100% student involvement in SAE programs. Wilson and Moore (2007) conducted a study of North Carolina agriculture teachers' perceptions of SAE. They found that teachers give the least amount of priority to SAE components of the agricultural education curriculum. They also reported the following barriers to effectively utilizing SAE: record keeping, high enrollment in agricultural education programs, lack of time, limited opportunities for student SAE programs, and lack of knowledge of new SAE categories. Miller (1980) conducted a study of North Carolina agriculture teachers' perceptions of the changing status of SAE. Miller found that student participation in SAE was declining, and those teachers were not highlighting SAE as much as they had before. The researcher noted that the teachers reported that they planned to increase their emphasis in the future. Miller also reported that over half of the teachers were conducting SAE home visits, with reduced school time provided for home visits. Retallick (2010) conducted a study of Iowa agriculture teachers' perspectives of the implementation of SAE programs. Retallick found that agriculture teachers utilized SAE in their classrooms "because it is (a) a means of developing life skills (i.e. record-keeping and employability skills), (b) a component of

the FFA award system, and (c) theoretically, serves as one-third of the agricultural education model" (p. 65). Retallick also stated that current SAE practice has not advanced or adapted with the changing demographics of agricultural education classrooms and student populations. Retallick recommended that additional efforts be made to ensure that teachers are provided with classes to assist in lessening the current barriers of SAE execution that are present within agricultural education classrooms. Rayfield and Croom (2010) examined middle school agriculture teachers' program needs. They reported that the panelists indicated difficulty in engaging middle school students in SAE programs. They suggested that middle school agriculture teachers introduce SAE as a concept that they will further explore more in depth in high school. Finally, the researchers stated that middle school teachers are developing innovation instruction practices to improve SAE instruction.

Development and Implementation of SAE

For SAE to be successful, teachers must assist students in the growth and application of SAE programs that meet their needs and interests (Barrick, et al, 1992). In order to effectively develop SAE programs, teachers must develop positive working relationships with students, parents, employers, administrators, and community members (Phipps et al., 2008). To assist teachers in developing and implementing effective SAE programs, Barrick et al. developed nine requirements for SAE programs. When selecting a topic area for an SAE program the teacher must work with the student, parent, community member, and/or employer that will be assisting with the program. When selecting a suitable SAE, the following factors must be considered: student prior experiences, student interests, student resources, student career interests, parental support, and available facilities for utilization (Barrick et al., 1992). Phipps et al. (2008) stated

that not every student will come into an agricultural education program with an SAE program topic.

National FFA Organization

The National FFA Organization, established in 1928, was developed to provide premier leadership, personal growth, and career success to students through agricultural education (Bender, Taylor, Hansen, & Newcomb, 1979). FFA has always been one of the main components of agricultural education and is utilized as a great motivator of students (Phipps, 1980). FFA is structured on three levels including the local chapter, state association, and national organization.

The National FFA Organization grew out of the Future Farmers of Virginia (FFV), an organization for farm boys developed by Edmund Magill, Harry Sanders, and Henry Groseclose in 1926 (National FFA Organization, 2018). Groseclose was asked to develop rituals and procedures for the young FFV organization. He utilized and adopted colors and ceremonies from the Grange, another early agricultural society. By 1930, the FFA was a national organization with its own colors, creed, and ceremonies (Connors, 2013). From 33 farm boys in 1928, the National FFA Organization has developed into a diverse organization spanning all fifty state and two territories and, representing over 650,000 members nationwide.

Preservice Teacher's Perception of FFA

Through a focus group with cooperating teachers, Edwards and Briers (2001) found several important elements for the preservice teacher during the apprentice teaching experience. These included: resources available to train a competitive team, FFA activities essential for a balanced program, delegating the training of a competitive team to the student teacher, strong classroom instruction in leadership development, a cooperating teacher that is familiar with

current CDE and LDE rules, opportunities for the student to judge or monitor a district or area LDE, and a history of successful participation.

Kelsey (2006), in a case study of female preservice teachers, found a need for teacher educators to "spend more time teaching students how to manage the required paperwork for field trips, activity account money, purchase orders, SAE, and the National FFA Organization" (p. 130). Additionally, student teachers also felt they lacked sufficient preparation to manage job requirements outside of the curriculum such as alumni chapters and National FFA Organization chapter events.

Agriculture Teacher's Perceptions of FFA

Among Oklahoma agriculture teachers Adams (1982) found teachers belief that FFA proficiency awards may be too complicated for students to fill out and the award program should not be a part of the superior chapter award.

In a study of California agriculture teachers, Delnero and Montgomery (2001) described teachers as an activities coach (involved in FFA activities), academic teacher (primary duties in the classroom and laboratory) or vocational mentor (primarily involved with SAE). Overall half the teachers described their current work load and balance of the three as ideal. Only two viewed their current work as primarily an activities coach and desired the ideal as an academic teacher.

Myers, Dyer, and Washburn (2005) suggest the most commonly identified problems of beginning secondary agriculture teachers include organizing effective FFA alumni, advisory committees, and organizing and planning FFA activities.

CHAPTER 3

METHODOLOGY

Introduction

This study utilized a descriptive-correlational research design. It examined early-career agriculture teacher's self-efficacy in the context of the three component model of agricultural education, early-career agriculture teacher's job satisfaction, and early-career agriculture teacher's career commitment. This study attempted to assess all teachers in the state of Georgia in their first through fifth year of teaching agriculture.

Objectives

1. Describe the personal characteristics of early-career agriculture teachers in the state of Georgia.
2. Describe the self-efficacy of early-career agriculture teachers in the state of Georgia for each of the three components of the agricultural education model.
3. Describe the job satisfaction and career commitment for early-career agriculture teachers in the state of Georgia.
4. Describe the relationship between personal characteristics and self-efficacy for early-career agriculture teachers in the state of Georgia.
5. Describe the relationship between self-efficacy and job satisfaction and career commitment for early-career agriculture teachers in the state of Georgia.

Research Design

This study utilized a non-experimental descriptive correlational survey research design to help meet the research objectives. This research design was chosen due to the ability to reach a larger sample size and population during a specified time period and minimize possible bias that

could arise from utilization of different research methods. Additionally, this method permitted the data collection to be done within the natural setting of the participants' environment, which excluded any need to manipulate variables. Furthermore, prior literature has used the descriptive-correlational survey design to determine levels of self-efficacy, job satisfaction, and career commitment. Descriptive research has been named as "research that asks questions about the nature, incidence, or distribution of variables; it involves describing but not manipulating variables" (Ary, Jacobs, & Sorensen, 2010, p.640). Descriptive research has been cited similar to survey research. Survey research is defined as examination where the researcher asks multiple questions relating to peoples' characteristics, beliefs, opinions, and actions (Ary et al., 2010). A wide range of disciplines have used questionnaires in studies as a source of data collection (Ary et al., 2010).

Dillman, Smyth, and Christian (2014) recognized four major types of survey errors that researchers should control when collecting data. First, coverage error occurs when the population features that the researcher wishes to estimate are not represented by the population samples. To minimize this error, all Georgia agricultural education teachers with five years or less experience were sampled. This also minimized sampling error, which has been defined as "extent to which the precision of the survey estimates is limited because only some people from the sample frame are selected to complete the survey (i.e., sampled) and others are not" (Dillman et al., 2014, p.4). Third, nonresponse error was addressed by comparing early and late respondents in the study. Late respondents are those who respond to the final impetus. If there are less than 30 responses to the last stimuli, the responses to the last two reminders should be used. If no difference is discovered between early and late respondents, the results can be generalized to the population (Linder, Murphy, & Bryers, 2001). Finally, measurement error results from a discrepancy in

unobserved variables and the survey responses. This could result from respondent characteristics or as a function of the items or questionnaire.

Population

The population for this study was Georgia agricultural education teachers who have been teaching for 5 years or less (n = 150). The list of teachers was obtained from the three Region Coordinators of Agricultural Education and corroborated with the secretary of the Georgia Vocational Agricultural Teacher Association.

Internal Validity and Reliability

Content validity is the "extent to which a specific set of items reflects a content domain" (DeVellis, 2003, p. 49). Face validity is the general appeal and appearance of the instrument and whether the instrument appears to measure what is proposed. Content validity was addressed by ensuring the items on the questionnaire represent the Georgia Program of Work for agriculture teachers with regards to FFA and SAE responsibilities. Face validity was established by faculty at Auburn University. Additions, deletions, suggestions and corrections made by the panel were taken into consideration. The instrument was modified and changes reflected the suggestions of the reviewers.

After the development of the instrument, reliability was assessed using the Cronbach's alpha internal consistency reliability coefficient. This is used to determine the homogeneity of items in a scale (Devillis, 2003). Cronbach's alpha is recommended to assess the internal consistency of self-efficacy instruments (Bandura, 2006).

Instrumentation and Data Collection

The instrument designed by the researcher included items encompassing all areas of the three component model of agricultural education – Classroom, SAE, and FFA. Classroom items

were taken and modified from the Teacher's Sense of Efficacy Scale long form (Tschannen-Moran & Woolfolk Hoy, 2001). Four items were taken from each of the three factors, instructional strategies, classroom management, and student engagement. The phrasing of each item was changed from "How much/To what extent/How well" to "I can/I am able to." These items were scaled on a five-point scale (1 = Strongly Disagree, 2 = Somewhat Disagree, 3 = Neither Agree Nor Disagree, 4 = Somewhat Agree, 5 = Strongly Agree). The twelve items used had a reliability of α =.93.

The items used to assess self-efficacy in the domains of SAE and FFA were taken from the 2016-2017 Georgia Agricultural Education Program of Work and Performance Evaluation and Wolf's (2008) Agriculture Teacher Self-Efficacy Scale. These items were also scaled on a five-point scale (1 = Strongly Disagree, 2 = Somewhat Disagree, 3 = Neither Agree Nor Disagree, 4 = Somewhat Agree, 5 = Strongly Agree). Reliability was calculated for the FFA and SAE items (α = .83, .82).

Job satisfaction was measured using items from the General Job Satisfaction subscale from the Job Diagnostic Survey (JDS; Hackman & Oldham, 1975). The General Job Satisfaction subscale consisted of three items that measured the extent to which employees are happy with their job (Hackman & Oldham, 1975). These items have been used in agricultural education research by Sorenson & McKim (2014) and in other research with educators (Barnabè & Burns, 1994; Klusmann, Kunter, Trautwein, Lüdtke, & Baumert, 2008). Hennessy & Lent (2008) reported a Cronbach's alpha of .78 for this measure. Wiley (1987) also found satisfactory reliability (α = .86) with the General Job Satisfaction subscale.

Items used to measure career commitment in agricultural education teachers were taken from Knobloch and Whittington (2003) and scaled on a five-point scale (1 = Strongly Disagree,

2 = Somewhat Disagree, 3 = Neither Agree Nor Disagree, 4 = Somewhat Agree, 5 = Strongly Agree). In their study, the items were found to be reliable with a reported Cronbach's alpha = .72. Additionally, work done by Wheeler and Knobloch (2006) reported a post-hoc reliability coefficient of .88.

The instrument also included items on the personal characteristics of respondents. This included the year of birth, highest level of education completed, years teaching agricultural education, gender, past enrollment in agricultural education courses, past membership in FFA, method of teacher certification, and current enrollment in the respondent's agricultural education program. An item on unique experiences was also included, giving respondents to opportunity to report service as a National or State FFA officer or past employment at the Georgia FFA/FCCLA Summer Leadership Camp.

After approval of the study was granted by Auburn University's Institutional Review Board (See Appendix 1), the researcher began the process of data collection.

Data Collection

Dillman et al's (2014) tailored design method will be followed for the data collection procedures in this study. Anderson (2008) found that Georgia agricultural education teachers primarily communicate through email, therefore a web-based survey distributed through email appeared most appropriate. Data will be collected using Qualtrics online survey tool. Through the use of the Georgia Agricultural Education website directory, all teacher email addresses were collected. These email addresses were placed into the Qualtrics distribution system. An initial pre-notice email will be sent to all participants informing them of the study and that they will receive a link to the instrument the next week. One week later, an email containing the survey link will be sent to those participants who had not responded after 14 and 28 days. These

included varied information in order to maximize response rate. Electronic data collection was selected because of the cost effectiveness compared to telephone calls and postal collection as well as the reduction in time required for survey execution (Dillman et al, 2014). Clear directions were also given to participants to ensure teachers could easily complete the electronic survey.

After administration of the survey and follow-up with non-respondents, the response rate was 67.33% after 101 teachers responded of the population of 150.

Data Analysis

Data acquired through Qualtrics will be analyzed using SPSS 20 (Statistical Package for the Social Sciences). Each research objective will be analyzed according to the kind of data collected and the most suitable method for that data. Research objective one was to describe the personal characteristics of early career agricultural education teachers. The objective will be addressed by providing means, frequencies, and standard deviations to describe the participants.

Research objective two seeks to describe the self-efficacy of early career agricultural education teachers in the three domains of classroom, SAE, and FFA. The researcher will use frequencies, means, and standard deviations as appropriate to describe levels of self-efficacy.

Research objective three seeks to describe the job satisfaction and career commitment of early career agricultural education teachers in state of Georgia. The researcher will use frequencies, means, and standard deviations as appropriate to describe levels of job satisfaction and career commitment.

Research objective four looks to describe the relationship between personal characteristics and self-efficacy for early-career agriculture teachers in the state of Georgia. T-tests were used to determine relationship between self-efficacy and the following: gender, enrollment in a middle or high school agricultural education course, and FFA membership during

middle or high school. ANOVA was used to determine the relationship between self-efficacy and the following: Level of education, unique experiences, teacher certification, years of experience, age, and agricultural education program enrollment.

Research objective five seeks to describe the relationship between self-efficacy and job satisfaction and career commitment for early-career agriculture teachers in the state of Georgia. The independent variables of self-efficacy in each of the three components of the agricultural education model (Classroom/Lab, SAE, and FFA) were used to predict the dependent variables of job satisfaction and career commitment. A multivariate multiple regression was performed in order to address this research question.

CHAPTER 4

FINDINGS

This chapter includes the findings of the study, presented by objective. The purpose of this study was to describe the self-efficacy of Georgia early-career agricultural education teachers and its relationship to personal characteristics, career commitment, and job satisfaction. The population of teachers with five years of experience or less (n =150) was the target population for the study. One hundred and one teachers responded to the questionnaire for a response rate of 67.33%.

1. Describe the personal characteristics of early-career agriculture teachers in the state of Georgia.
2. Describe the self-efficacy of early-career agriculture teachers in the state of Georgia for each of the three components of the agricultural education model.
3. Describe the job satisfaction and career commitment for early-career agriculture teachers in the state of Georgia.
4. Describe the relationship between personal characteristics and self-efficacy for early-career agriculture teachers in the state of Georgia.
5. Describe the relationship between self-efficacy and job satisfaction and career commitment for early-career agriculture teachers in the state of Georgia.

1. Describe the personal characteristics of early-career agriculture teachers in the state of Georgia.

Gender

Female teachers made up the greater gender group of respondents (*f* = 59, %=58.4). Male respondents comprised 41.2% (*f*=42) of the population.

Table 1

Distribution of Georgia Early Career Agriculture Teachers by Gender

Gender	*f*	*%*
Male	42	41.2
Female	59	58.4
Total	101	100

Age

The ages of the population ranged from 23 to 63. The average age of participants was approximately 29 years old. Eighteen participants (17.6%) were 23 or 24 years old; twenty-eight (27.5%) were 25 or 26 years old; twenty-eight (27.5%) were 27 or 28 years old; twenty-seven (26.5%) were 29 years old or greater (Table 2).

Table 2

Distribution of Georgia Early Career Agriculture Teachers by Age

Age Group	*f*	*%*
23-24	18	17.6
25-26	28	27.5
27-28	28	27.5
>28	27	26.5
Total	101	100

Degree

Respondents had educational degrees ranging from bachelor's to educational specialists. Sixty-eight participants (66.7%) had a bachelor's degree; Twenty-eight participants (27.5%) had a master's degree; and five participants (4.9%) had a specialist's degree (Table 3).

Table 3

Distribution of Georgia Early Career Agriculture Teachers by Educational Degree

Age Group	*f*	*%*
Bachelor's	68	66.7
Master's	28	27.5
Specialist's	5	4.9
Total	101	100

Experience

The population was comprised of teachers with five years or less experience. Nineteen participants (18.6%) were in their first year of teaching; twenty participants (19.6%) were in their

second year of teaching; twenty-four participants (23.5%) were in their third year of teaching; twenty participants (19.6%) were in their fourth year of teaching; eighteen participants (17.6%) were in their fifth year of teaching (Table 4).

Table 4

Distribution of Georgia Early Career Agriculture Teachers by Teaching Experience

Years of Experience	*f*	*%*
1	19	18.6
2	20	19.6
3	24	23.5
4	20	19.6
5	18	17.6
Total	101	100

Past Employment/Experience

Table 5 describes the past employment and experience of the population related to agricultural education. Eighty-seven participants (85.3%) did not serve as state or national FFA officers and were not employed as camp staff at the Georgia FFA/FCCLA Center. Eight participants (7.8%) were employed as camp staff at the Georgia FFA/FCCLA Center. Five participants (4.9%) served as a state FFA officer. One participant (1.0%) was employed as camp staff at the Georgia FFA/FCCLA Center and served as a state FFA officer. No participants served as a National FFA Officer.

Table 5

Distribution of Georgia Early Career Agriculture Teachers by Past Employment and Experience

Past Employment or Experience	*f*	*%*
None	87	85.3
Georgia FFA/FCCLA Center Summer Leadership Camp Staff	8	7.8
State FFA Officer	5	4.9
Georgia FFA/FCCLA Center Summer Leadership Camp Staff and State FFA Officer	1	1.0
National FFA Officer	0	0
Total	101	100

Agricultural Education Participation

Table 6 describes the participants by their enrollment in agricultural education in high school or middle school. Ninety-four participants (92.2%) were enrolled in agricultural education in high school or middle school. Seven participants (6.9%) were not enrolled in agricultural education in high school or middle school.

Table 6

Distribution of Georgia Early Career Agriculture Teachers by Past Enrollment in Agricultural Education During Middle School or High School

Past Enrollment	*f*	*%*
Enrolled in Agricultural Education	94	92.2
Not enrolled in Agricultural Education	7	6.9
Total	101	100

FFA Membership

Table 7 describes the participants by their membership in FFA during middle school or high school. Ninety-one participants (89.2%) were FFA members in middle school or high school. Ten participants (9.8%) were not FFA members in middle school or high school.

Table 7

Distribution of Georgia Early Career Agriculture Teachers by Past Membership in FFA

Past Membership in FFA	*f*	*%*
FFA Member	91	89.2
Not an FFA Member	10	9.8
Total	101	100

Certification

Table 8 describes the participants by how their teaching certificate in agricultural education was obtained. Seventy-eight participants (76.5%) obtained their agricultural education certificate through traditional means. Thirteen participants (12.7%) obtained their agricultural education certificate through an alternative method. Ten participants (9.8%) were certified in another area and obtained their agricultural education certificate as an add-on.

Table 8

Distribution of Georgia Early Career Agriculture Teachers by Teaching Certification

Teaching Certification	*f*	*%*
Traditional	78	76.5
Alternative	13	12.7
Add-on	10	9.8
Total	101	100

Program Enrollment

Table 9 describes the participants by the enrollment of their agricultural education program. No teachers had a program with an enrollment of 50 or less students. Five participants (4.9%) had an enrollment between 51 and 75. Twenty participants (19.6%) had an enrollment between 76 and 100. Seven participants (6.9%) had an enrollment between 101 and 125. Thirteen participants (12.7%) had an enrollment between 126 and 150. Three participants (2.9%) had an enrollment between 151 and 175. Four participants (3.9%) had an enrollment between 176 and 200 students. Forty-nine participants (48.0%) had an enrollment greater than 200.

Table 9

Distribution of Georgia Early Career Agriculture Teachers by Program Enrollment

Program Enrollment	*f*	*%*
0-25	0	0
26-50	0	0
51-75	5	4.9
76-100	20	19.6
101-125	7	6.9
126-150	13	12.7
151-175	3	2.9
176-200	4	3.9
>200	49	48
Total	101	100

2. Describe the self-efficacy of early-career agriculture teachers in the state of Georgia for each of the three components of the agricultural education model.

Respondents were asked to indicate their ability to perform tasks and activities related to FFA, SAE and classroom responsibilities. The following scale was used: 1 = strongly disagree; 2 = somewhat disagree; 3 =neither agree nor disagree; 4 = somewhat agree; and 5 = strongly agree.

In the area of FFA responsibilities, participants had an overall mean of 4.49 and a standard deviation of .45 (Table 10). The item with the highest self-efficacy was "I can assist students in conducting an FFA parent/members awards banquet." This item had a mean of 4.75 and a standard deviation of .52. The item with the lowest self-efficacy was "I can assist chapter officers in preparing officer books (Treasure, Reporter, Secretary). This item had a mean of 4.00 and a standard deviation of 1.09.

Table 10

Self-Efficacy Toward Selected Job Competencies Related to FFA as Perceived by Georgia Early Career Agriculture Teachers

Question Regarding Selected FFA Competencies	n^a	M^b	*SD*
I can assist students in conducting an FFA parent/member awards banquet.	101	4.75	0.52
I can advise in the planning of monthly FFA chapter meetings.	101	4.69	0.46
I can effectively plan trips to FFA leadership events such as Region Rally, Success Conference, and National FFA Convention.	98	4.69	0.68
I am able to conduct activities in recognition of National FFA Week.	101	4.61	0.59
I can train students to participate in Career Development events (Agricultural Mechanics, Forestry, Floriculture, Livestock Evaluation, etc.)	98	4.56	0.66
I can advise in the selection and planning of a community service project.	101	4.54	0.58
I can train students to participate in Leadership Development events (Parliamentary Procedure, Prepared Public Speaking, Extemporaneous Public Speaking, etc.)	98	4.53	0.66
I am able to plan and conduct an FFA Chapter Officer retreat.	101	4.42	0.79
I can conduct and keep minutes for an advisory committee meeting.	98	4.37	0.84
I am able to assist student in completing a National Chapter application.	101	4.10	1.03
I can assist chapter officers in preparing officer books (Treasurer, Reporter, Secretary).	101	4.00	1.09

Note: [a]n ≠ 101 due to item non-response.
[b]Scale of 1 = *Strongly Disagree*, 2 = *Somewhat Disagree*, 3 = *Neither Agree nor Disagree*, 4 = *Somewhat Agree* 5 = *Strongly Agree* Overall *M* = 4.49, *SD* = .45

In the area of classroom and laboratory responsibilities, participants had an overall mean of 4.16 and a standard deviation of .60 (Table 11). The item with the highest self-efficacy was "I am able to help students think critically." This item had a mean of 4.39 and a standard deviation

of .75. The item with the lowest self-efficacy was "I can motivate students who show low interest in schoolwork." This item had a mean of 3.75 and a standard deviation of .83.

Table 11

Self-Efficacy Toward Selected Job Competencies Related to Classroom/Laboratory as Perceived by Georgia Early Career Agriculture Teachers

Question Regarding Selected Classroom/Laboratory Competencies	*n*	*M*[1]	*SD*
I am able to help students think critically.	101	4.39	0.75
I am able to foster student creativity.	101	4.34	0.74
I can establish a classroom management system with each group of students.	101	4.29	0.68
I can use a variety of assessment strategies.	101	4.28	0.72
I am able to gauge student comprehension of what I have taught.	101	4.25	0.77
I am able to establish routines to keep activities running smoothly	101	4.23	0.82
I am able to calm a student who is disruptive or noisy.	101	4.19	0.69
I can adjust my lessons to the proper level for individual students.	101	4.07	0.97
I can assist families in helping their children do well in school.	101	4.06	0.85
I can implement alternative strategies in my classroom.	101	4.02	0.99
I am able to control disruptive behavior in the classroom.	101	4.02	0.89
I can motivate students who show low interest in schoolwork.	101	3.75	0.83

Note: [1] Scale of 1 = *Strongly Disagree*, 2 = *Somewhat Disagree*, 3 = *Neither Agree nor Disagree*, 4 = *Somewhat Agree* 5 = *Strongly Agree* Overall *M* = 4.16, *SD* = .60

In the area of SAE responsibilities, participants had an overall mean of 4.06 and a standard deviation of .828 (Table 12). The item with the highest self-efficacy was "I am able to make recommendations to increase the quality of my student's SAE records." This item had a

mean of 4.39 and a standard deviation of .49. The item with the lowest self-efficacy was "I am able to effectively utilize community support to develop my students' SAE programs." This item had a mean of 3.81 and a standard deviation of 1.10.

Table 12

Self-Efficacy Toward Selected Job Competencies Related to SAE as Perceived by Georgia Early Career Agriculture Teachers

Question Regarding Selected SAE Competencies	*n*	*M*[1]	*SD*
I am able to make recommendations to increase the quality of my student's SAE records.	101	4.39	0.49
I can conduct visits to students' homes and workplaces to evaluate SAE programs.	101	4.21	0.83
I can provide meaningful instruction about SAE programs.	101	4.07	0.91
I can motivate students to begin an SAE program	101	4.02	0.85
I can successfully guide my students through completing an FFA proficiency application.	101	3.88	1.00
I am able to effectively utilize community support to develop my students' SAE programs.	101	3.81	1.10

Note:[1] Scale of 1 = *Strongly Disagree*, 2 = *Somewhat Disagree*, 3 = *Neither Agree nor Disagree*, 4 = *Somewhat Agree* 5 = *Strongly Agree* Overall *M* = 4.06, *SD* = .83

3. Describe the job satisfaction and career commitment for early-career agriculture teachers in the state of Georgia.

Job Satisfaction

Job satisfaction was measured using items from the General Job Satisfaction subscale from the Job Diagnostic Survey (JDS; Hackman & Oldham, 1975). The General Job Satisfaction subscale consisted of three items that measured the extent to which employees are happy with their job (Hackman & Oldham, 1975). The following scale was used: 1 = strongly disagree; 2 = somewhat disagree; 3 =neither agree nor disagree; 4 = somewhat agree; and 5 = strongly agree. Item two, "I frequently think of quitting this job" was reverse coded due to the negative nature of

the item. Early career agriculture teachers showed slight levels of job satisfaction with a mean of 3.88 and a standard deviation of .76 (Table 13).

Table 13

Job Satisfaction as Perceived by Georgia Early Career Agriculture Teachers

Question Regarding Job Satisfaction	*n*	*M*[1]	*SD*
I am generally satisfied with the kind of work I do in this job.	101	4.40	0.63
Generally speaking, I am very satisfied with this job.	101	3.89	0.90
I frequently think of quitting this job.[2]	101	3.35	1.46

Note: [1] Scale of 1 = *Strongly Disagree*, 2 = *Somewhat Disagree*, 3 = *Neither Agree nor Disagree*, 4 = *Somewhat Agree* 5 = *Strongly Agree* Overall *M* = 3.88, *SD* = .76
[2] Item was reverse coded.

Career Commitment

Items used to measure career commitment in agricultural education teachers were taken from Knobloch and Whittington (2003) and scaled on a seven-point scale of 1 = strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = neither agree nor disagree, 5 = somewhat agree, 6 = agree, 7 = strongly agree. Item three, "I do not plan to be teaching next year" was reverse coded due to the negative nature of the item. Early career agriculture teachers showed moderate levels of career commitment with a mean of 5.55 and a standard deviation of 1.15 (Table 14)

Table 14

Career Commitment as Perceived by Georgia Early Career Agriculture Teachers

Question Regarding Career Commitment	*n*	*M*[1]	*SD*
Being a high school agriculture teacher has been my long term career goal.	101	5.16	1.43
I plan to teach for at least 5 years.	101	5.82	1.71
I do not plan to be teaching next year.[2]	101	5.87	1.90
Teaching as a career matches my personal and family needs.	101	5.36	1.81

Note: [1] Scale of 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Somewhat Disagree*, 4 = *Neither Agree nor Disagree*, 5 = *Somewhat Agree*, 6 = *Agree*, 7 = *Strongly Agree* Overall *M* = 5.55, *SD* = 1.15

[2] Item was reverse coded.

4. Describe the relationship between personal characteristics and self-efficacy for early-career agriculture teachers in the state of Georgia.

A comparison of the means for each respective group was conducted in reference to the personal characteristics of the participants. A *t*-test was used to analyze the differences that may exist between males and females, middle and high school agricultural education enrollment, and middle and high school FFA membership. An analysis of variance (ANOVA) was conducted to ascertain whether there were differences in the means of age, educational degree, teaching experience, past employment or experiences related to agricultural education, certification, and agricultural education program enrollment.

The *t*-test (Table 15) conducted between males and females revealed no statistically significant differences in self-efficacy in FFA, SAE, or classroom responsibilities.

Table 15

t-Test Between Males and Females for Self-Efficacy Toward Selected Job Competencies Related to FFA, Classroom/Laboratory, and SAE

Self-Efficacy	*FFA*			*Classroom*			*SAE*		
	M	*SD*	*t*	*M*	*SD*	*t*	*M*	*SD*	*t*
Male	4.44	.45	.93	4.11	.59	.74	3.98	.67	.33
Female	4.49	.46		4.19	.62		4.12	.62	

The *t*-test (Table 16) conducted between FFA members and non-FFA members revealed no statistically significant differences in self-efficacy in FFA, SAE, or classroom responsibilities.

Table 16

t-Test of Past FFA Membership for Self-Efficacy Toward Selected Job Competencies Related to FFA, Classroom/Laboratory, and SAE

Self-Efficacy	*FFA*			*Classroom*			*SAE*		
	M	*SD*	*t*	*M*	*SD*	*t*	*M*	*SD*	*t*
FFA Member	4.49	.44	.59	4.16	.61	.84	4.10	.62	.33
Non-FFA Member	4.26	.56		4.13	.61		3.77	.79	

The *t*-test (Table 17) conducted between those enrolled in agricultural education and not enrolled in agricultural education during middle and high school revealed no statistically significant differences in self-efficacy in FFA, SAE, or classroom responsibilities.

Table 17

t-Test of past Agricultural Education Enrollment for Self-Efficacy Toward Selected Job Competencies Related to FFA, Classroom/Laboratory, and SAE

Self-Efficacy	*FFA*			*Classroom*			*SAE*		
	M	*SD*	*t*	*M*	*SD*	*t*	*M*	*SD*	*t*
Ag Ed	4.47	.46	.52	4.15	.61	.90	4.06	.65	.48
Non-Ag Ed	4.39	.38		4.25	.54		4.05	.54	

ANOVAs were conducted to accurately assess whether there were differences in the means reported among different ages, educational degrees, teaching experience, past employment and experience in FFA, route to teaching certification and agricultural education program enrollment. The significance level used to determine differences in means was $p<.05$. The ANOVA conducted for differing ages, reported in Table 18 revealed no statistically significant differences in self-efficacy in SAE or classroom responsibilities. There was a significant difference (p = .015) between groups in FFA self-efficacy (Table 18). Upon post-hoc analysis, the age groups of 27-28 and 29 and over had a significantly different mean self-efficacy score in the area of FFA. Post hoc testing was conducted using Tukey's HSD to determine specific certification group differences, if any existed. A Levene's test for equality of variances confirmed that group means did not violate the assumption of homogeneity and an ANOVA could be conducted. These analyses indicated that within the FFA construct, those participants who were ages 27-28 with a mean of 4.66 (SD=.33) scored .39 points higher than participants 29 years of age or older (M=4.27, SD=.57). This was a significant difference (p = .009).

Table 18

Self-Efficacy Toward Selected Job Competencies Related to FFA, Classroom/Laboratory, and SAE by Age Groups

	n	M^{abc}	*SD*	*F*	*p*
FFA				3.65	.02
23-24	18	4.41	.41		
25-26	27	4.49	.39		
27-28	28	4.66	.33		
29 and over	25	4.27	.57		
SAE				2.26	.09
23-24	18	4.22	.59		
25-26	28	3.95	.67		
27-28	28	4.25	.39		
29 and over	27	3.88	.80		
Classroom/Laboratory				2.10	.11
23-24	18	4.16	.63		
25-26	28	3.96	.73		
27-28	28	4.35	.34		
29 and over	27	4.15	.62		

Note: Three participants did not indicate a response in the FFA section. M^{a}=4.47, *SD*=..45; M^{b}=4.06, *SD*=.64; M^{c}=4.16, *SD*=.60; Scale of 1 = *Strongly Disagree*, 2 = *Somewhat Disagree*, 3 = *Neither Agree nor Disagree*, 4 = *Somewhat Agree* 5 = *Strongly Agree*

The ANOVA conducted for educational degrees, reported in Table 19, revealed no statistically significant differences in self-efficacy in FFA, SAE, or classroom responsibilities.

Table 19

Self-Efficacy Toward Selected Job Competencies Related to FFA, Classroom/Laboratory, and SAE by Education Degrees

	n	M^{abc}	*SD*	*F*	*p*
FFA				1.81	.17
Bachelor's	66	4.43	.42		
Master's	27	4.60	.52		
Educational Specialist	5	4.27	.41		
SAE				.01	.99
Bachelor's	68	4.06	.65		
Master's	28	4.08	.66		
Educational Specialist	5	4.03	.65		
Classroom/Laboratory				2.11	.13
Bachelor's	68	4.12	.62		
Master's	28	4.32	.47		
Educational Specialist	5	3.78	.93		

Note: Three participants did not indicate a response in the FFA section. M^{a}=4.47, *SD*=..45; M^{b}=4.06, *SD*=.65; M^{c}=4.16, *SD*=.60; Scale of 1 = *Strongly Disagree*, 2 = *Somewhat Disagree*, 3 = *Neither Agree nor Disagree*, 4 = *Somewhat Agree* 5 = *Strongly Agree*

The ANOVA conducted for teaching experience, reported in Table 20 revealed no statistically significant differences in self-efficacy in FFA, SAE, or classroom responsibilities.

Table 20

Self-Efficacy Toward Selected Job Competencies Related to FFA, Classroom/Laboratory, and SAE by Years of Teaching Experience

	n	M^{abc}	*SD*	*F*	*p*
FFA				1.32	.27
One	19	4.34	.38		
Two	20	4.39	.40		
Three	24	4.55	.33		
Four	20	4.61	.67		
Five	15	4.42	.37		
SAE				1.57	.19
One	19	4.11	.65		
Two	20	4.13	.40		
Three	24	4.04	.75		
Four	20	3.78	.86		
Five	18	4.28	.26		
Classroom/Laboratory				.29	.88
One	19	4.06	.64		
Two	20	4.14	.73		
Three	24	4.12	.65		
Four	20	4.22	.53		
Five	18	4.25	.46		

Note: Three participants did not indicate a response in the FFA section. M^{a}=4.47, *SD*=.45; M^{b}=4.06, *SD*=.64; M^{c}=4.16, *SD*=.60; Scale of 1 = *Strongly Disagree*, 2 = *Somewhat Disagree*, 3 = *Neither Agree nor Disagree*, 4 = *Somewhat Agree* 5 = *Strongly Agree*

The ANOVA conducted for past employment and experience in FFA, reported in Table 21 revealed no statistically significant differences in self-efficacy in FFA, SAE, or classroom responsibilities.

Table 21

Self-Efficacy Toward Selected Job Competencies Related to FFA, Classroom/Laboratory, and SAE by Past Employment or Experience in FFA

	n	M^{abc}	*SD*	*F*	*p*
FFA				.35	.79
No Past Employment or Experiences	84	4.47	.05		
Georgia FFA/FCCLA Center Summer Leadership Camp Staff	8	4.52	.47		
State FFA Officer	5	4.31	.59		
Georgia FFA/FCCLA Center Summer Leadership Camp Staff and State FFA Officer	1	4.73			
SAE				.13	.94
No Past Employment or Experiences	87	4.06	.67		
Georgia FFA/FCCLA Center Summer Leadership Camp Staff	8	4.10	.60		
State FFA Officer	5	3.93	.22		
Georgia FFA/FCCLA Center Summer Leadership Camp Staff and State FFA Officer	1	4.33			
Classroom/Laboratory				2.18	.10
No Past Employment or Experiences	87	4.16	.61		
Georgia FFA/FCCLA Center Summer Leadership Camp Staff	8	4.41	.36		
State FFA Officer	5	3.57	.13		
Georgia FFA/FCCLA Center Summer Leadership Camp Staff and State FFA Officer	1	4.42			

Note: Three participants did not indicate a response in the FFA section. M^{a}=4.47, *SD*=.45; M^{b}=4.06, *SD*=.64; M^{c}=4.16, *SD*=.60; Scale of 1 = *Strongly Disagree*, 2 = *Somewhat Disagree*, 3 = *Neither Agree nor Disagree*, 4 = *Somewhat Agree* 5 = *Strongly Agree*

The ANOVA conducted for differing routes to teacher certification, reported in Table 22 revealed no statistically significant differences in self-efficacy in SAE or classroom responsibilities. There was a significant difference in FFA scores between age groups at the α=.05 level, F(2,95)=4.80, p=.01. Post hoc testing was conducted using Tukey's HSD to determine specific certification group differences, if any existed. A Levene's test for equality of variances confirmed that group means did not violate the assumption of homogeneity and an

ANOVA could be conducted. These analyses indicated that within the FFA construct, those participants who were traditionally certified with a mean of 4.53 (SD=.43) scored .44 points higher than participants that added on an agricultural education certificate (M=4.09, SD=.49). This was a significant difference (p = .01).

Table 22

Self-Efficacy Toward Selected Job Competencies Related to FFA, Classroom/Laboratory, and SAE by Certification

	n	M^{abc}	*SD*	*F*	*p*
FFA				4.80	.01
Traditional	76	4.53	.43		
Alternative	12	4.39	.38		
Add-On	10	4.09	.49		
SAE				.60	.55
Traditional	78	4.07	.65		
Alternative	13	4.15	.53		
Add-On	10	3.87	.74		
Classroom/Laboratory				2.35	.10
Traditional	78	4.16	.60		
Alternative	13	4.37	.46		
Add-On	10	3.83	.70		

Note: Three participants did not indicate a response in the FFA section. M^{a}=4.47, *SD*=..45; M^{b}=4.06, *SD*=.65; M^{c}=4.16, *SD*=.60; Scale of 1 = *Strongly Disagree*, 2 = *Somewhat Disagree*, 3 = *Neither Agree nor Disagree*, 4 = *Somewhat Agree* 5 = *Strongly Agree*

The ANOVA conducted for program enrollment, reported in Table 23 revealed no statistically significant differences in self-efficacy in FFA, SAE, or classroom responsibilities.

Table 23

Self-Efficacy Toward Selected Job Competencies Related to FFA, Classroom/Laboratory, and SAE by Program Enrollment

	n	M^{abc}	*SD*	*F*	*p*
FFA				2.96	.06
1-100	27	4.47	.39		
101-200	25	4.29	.53		
>200	46	4.56	.42		
SAE				.29	.75
1-100	27	4.11	.64		
101-200	25	3.98	.77		
>200	49	4.08	.58		
Classroom/Laboratory				.31	.74
1-100	27	4.08	.71		
101-200	25	4.18	.67		
>200	49	4.19	.51		

Note: Three participants did not indicate a response in the FFA section. M^{a}=4.47, *SD*=..45; M^{b}=4.06, *SD*=.65; M^{c}=4.16, *SD*=.60; Scale of 1 = *Strongly Disagree*, 2 = *Somewhat Disagree*, 3 = *Neither Agree nor Disagree*, 4 = *Somewhat Agree* 5 = *Strongly Agree*

5. Describe the relationship between self-efficacy and job satisfaction and career commitment for early-career agriculture teachers in the state of Georgia.

In order to determine the relationship between the variables multiple regression analysis, using the enter method, was run in SPSS. The first dependent variable entered into regression analysis was the participant's job satisfaction score, and the independent variables entered were self-efficacy in FFA, SAE, and classroom responsibilities.

Results from the multiple regression analysis indicate that self-efficacy in FFA, SAE, and classroom responsibilities produced an $R = .44$ and $r^2 = .20$ (Table 24). The r^2 indicates that the combination of self-efficacy in FFA, SAE, and classroom responsibilities explained 20.0% of job satisfaction (Table 24).

Table 24

Regression to Explain Variance in Job Satisfaction (n = 101)

	R	r^2	*b*	*β*	*t-value*	*p*
Model 1	.44	.20				.00
FFA			-.42	-.25	-2.08	.04
SAE			-.18	-.16	-1.12	.27
Classroom/Laboratory			.77	.62	4.51	.00

Note: Adjusted $R^2 = .17$, $F_{3, 94} = 7.68$, $p \leq .05$

ANOVA was run as a part of the multiple regression analysis. The ANOVA produced an F value of 7.68 and p < .001 (Table 24). This makes the regression model significant.

The variables of FFA and classroom self-efficacy produced significant standardized coefficients. Self-efficacy in FFA produced a beta of -.25 with the *t*-test reporting a significance of p = .04 (Table 24). Self-efficacy in classroom responsibilities produced a beta of .62 with *t*-test reporting a significance of p < .001.

The second dependent variable entered into regression analysis was the participant's career commitment score, and the independent variables entered were self-efficacy in FFA, SAE, and classroom responsibilities.

Results from the multiple regression analysis indicate that self-efficacy in FFA, SAE, and classroom responsibilities produced an $R = .42$ and $r^2 = .18$ (Table 24). The r^2 indicates that the combination of self-efficacy in FFA, SAE, and classroom responsibilities explained 18.0% of career commitment.

Table 25

Regression to Explain Variance in Career Commitment (n = 101)

	R	r^2	*b*	*β*	*t-value*	*p*
Model 1	.42	.18				.00
FFA			.11	-.04	-.35	.72
SAE			.13	.07	.52	.60
Classroom/Laboratory			.76	.40	2.83	.01

Note: Adjusted $R^2 = .15$, $F_{3, 94} = 6.87$, $p \leq .05$

ANOVA was run as a part of the multiple regression analysis. The ANOVA produced an F value of 6.87 and p < .001 (Table 25). This makes the regression model significant.

The variable of classroom self-efficacy produced a significant standardized coefficient. Self-efficacy in classroom responsibilities produced a beta of .40 with *t*-test reporting a significance of p = .01 (Table 25).

CHAPTER 5
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

Eck & Edwards (2019) report that "numerous challenges continue to face the agricultural education profession, but none more important than the preparation and provision of qualified teachers" (p. 235). Nationally, a deficit of qualified agricultural education teachers occurs and continues to happen each year. The distinctive organization of school based agricultural education program model presents agricultural education teachers with additional tasks that are above and beyond the scope of the average content teacher (Walker, Garton, & Kitchel, 2004; Talbert, Vaughn, Croom, & Lee, 2007). A lack of proficiency and support in the classroom, National FFA Organization, Supervised Agricultural Experience (SAE) and other program related job competencies can have a negative impact on teacher retention (Greiman, Walker, & Birkenholz, 2005).

Self-efficacy can be attributed to the career commitment of agriculture teachers due to the nature of self-efficacy. Bandura (1977) hypothesized that an individual with high self-efficacy will perceive a challenge as attainable when they take into consideration their perception of their abilities. If the individual's self-efficacy is low, then they may not attempt the task as they seen the challenge as unattainable. Among agriculture teachers, self-efficacy has been shown to have a positive relationship with career commitment (Blackburn & Robinson, 2008; Swan, 2005; Wheeler & Knobloch, 2006; Whittington et al., 2006; McKim & Velez, 2015).

Summary of Purpose and Objectives

The purpose of this study was to determine the self-efficacy of Georgia early career agriculture teachers toward selected job competencies related to the three component model of agricultural education and the impact of self-efficacy on job satisfaction and career commitment.

The objectives that guided this study were:

1. Describe the personal characteristics of early-career agriculture teachers in the state of Georgia.
2. Describe the self-efficacy of early-career agriculture teachers in the state of Georgia for each of the three components of the agricultural education model.
3. Describe the job satisfaction and career commitment for early-career agriculture teachers in the state of Georgia.
4. Describe the relationship between personal characteristics and self-efficacy for early-career agriculture teachers in the state of Georgia.
5. Describe the relationship between self-efficacy and job satisfaction and career commitment for early-career agriculture teachers in the state of Georgia.

Summary of Methods

The population utilized for this study was Georgia agricultural education teachers with five years or less experience. Participants were sent an introductory recruitment email along with an information letter and a link to an online survey for those willing to participate. Two reminder email were sent two and four weeks after the initial distribution. Paper surveys were distributed at the Georgia Vocational Agriculture Teachers Association Conference to those who did not respond via email. After administration of the survey and follow-up with non-respondents, the response rate was 67.33% after 101 teachers of the population of 150.

Objectives one, two, and three were analyzed using descriptive methods including mean, frequencies, and standard deviations. Objective four was analyzed using t-tests and ANOVA. Objective five was analyzed using a multivariate multiple regression.

Conclusion, Implications, and Recommendations

Objective One Conclusions

The first objective was to describe the personal characteristics of early-career agriculture teachers in the state of Georgia. Women (58.4%) outnumbered men (41.6%). This is consistent with results by other researchers that indicate a demographic shift among agriculture teachers from male to female (Burris, McLaughlin, McCulloch, Brashears, & Fraze, 2010; Tummons, Langley, Reed & Paul, 2017).

While the majority of the participants (73.5%, *f* = 74) were 28 years of age or less, ages ranged from 23 to 63. Most participants (66.7%, *f* = 68)) had a bachelor's degree. With a population that only included teachers with five years or less experience, the levels of experience were fairly evenly spread with the largest group being those with three years of experience (23.5%, *f* = 24). The initial population utilized in this study was 150 which reflects the typical population of Georgia early career agriculture teachers which in recent years have made up around a third of the total number of agriculture teachers in the state (Hughes, 2019).

Most of the participants did not have a unique experience as a state or national FFA officer and were not employed as a Summer Leadership Camp counselor (85.3%, *f* = 87). As a whole, the vast majority of participants were engaged in school based agricultural education as a students with 92.2% (*f* = 94) having been enrolled in agricultural education and 89.2% (*f* = 91) having been an FFA member. This supports past work that students enrolled in agricultural education and actively involved in FFA were likely to choose agricultural education as a college major and as a possible career (Cole, 1984; Miller, Williams & Sprouse, 1984, Lawver & Torres, 2012).

Additionally, the majority of respondents (76.5%, *f* = 78) gained teacher certification through a traditional route. The 22.5% (*f* = 23) that gained certification in agricultural education through another method (alternative or add-on) reflects the national trend of 22.8% of new hires that completed their licensure through an alternative route (Smith, Lawver & Foster, 2019).

Finally, teachers in larger programs made up the majority of respondents with 48% (*f* = 49) of teachers working in a program with more than 200 students. The next largest group was teachers with 76 – 100 students enrolled (19.6%, *f* = 20). Some of the larger programs may be attributed to middle schools in which every student in the school rotates through the agricultural education program on a six week or nine week basis.

Objective One Implications

As the personal characteristics of the agricultural education teacher population continue to change, professional development and teacher education must change as well to meet the needs of the population. Teachers that lack background experience in agricultural education, FFA, and SAE may require differing training than those with greater experience in the three component model of agricultural education.

Objective One Recommendations

Further research should include questions regarding the ethnic background of the teacher as well as the make-up of the student population. As the majority of agricultural education teachers are white (Lawver, Foster, Smith, 2018, LaVergne, Jones, Larke, & Elbert, 2012), teachers with a race or ethnicity that does not match their student population may feel less self-efficacious in classroom management.

Objective Two Conclusions

Objective two sought to describe the self-efficacy of early-career agriculture teachers in the state of Georgia for each of the three components of the agricultural education model. The component of FFA had the highest mean self-efficacy, followed by classroom/laboratory, and then SAE.

In the area of FFA, conducting an FFA parent/member awards banquet and advising in the planning of monthly FFA chapter meetings had the highest self-efficacy. The lowest reported self-efficacy were in completing a National Chapter application, assisting chapter officers in preparing officer books, and conducting and keeping minutes for an advisory committee meeting.

In the area of classroom and laboratory, helping students to think critically and fostering student creativity had the highest reported levels of self-efficacy. Motivating students who showed low interest in schoolwork, controlling disruptive behavior and implementing alternative strategies in the classroom had the lowest reported levels of self-efficacy.

In the area of SAE, the highest reported self-efficacy was in the area of making recommendations to increase the quality of student's SAE records. The lowest reported self-efficacy was utilizing community support to develop students' SAE programs.

Objective Two Implications

The lowest area of self-efficacy occurred in the area of SAE. This supports prior research that identified SAE as having a need for more in-service training (Wilson & Moore, 2007, Retallick, 2010). SAE programming provides an "opportunity for relationship building among agriculture teachers, students, parents, school administrations, employers, and the community as a whole" (Retallick, 2010, p. 63). As agricultural practices and communities change, continued

training is needed for all agriculture teachers in developed students SAE that meet the needs of the community in which they are employed.

While classroom and laboratory had the second lowest mean score overall, the item of "I can motivate students who show low interest in schoolwork" had the lowest reported self-efficacy score of any item. Student motivation is a crucial part of learning and learning cannot happen without motivation (Phipps et al., 2008). Teachers must make personal connections, involve students in their learning, and use active strategies such as SAE and lab work to engage students and increase motivation (Reschly et al., 2008; Delle Fave & Massiimini, 2005).

FFA had the highest self-efficacy of any area. The items with the lowest self-efficacy reflected prior research. Managing an advisory board has been shown to be a professional development need (Joerger, 2002; Myers et al., 2005; Sorenson, Lambert, & McKim, 2014). In the state of Georgia, the National Chapter Application form II was completed by only 36% of chapters, indicating a possible lack of knowledge by teachers in completing the application (Hughes, 2019).

Objective Two Recommendations

This study described the reported levels of self-efficacy among early-career agriculture teachers. Further research should focus on source of self-efficacy among teachers based on the four sources of self-efficacy described by Bandura (1977), mastery experience, vicarious experiences, social persuasion and physiological and emotional states.

Many classroom and laboratory situations are unique to agricultural education. Future research should include items specific to agricultural subject areas including laboratory management in animal science, agricultural mechanics, horticulture, and forestry. The development and implementation of programs such as SAE for All should continue with roll out

to all agricultural education teachers and include case studies and examples of a wide variety of students with detailed implementations including those with low socioeconomic status.

The FFA items developed were related directly to the 2016-2017 Georgia Agricultural Education Program of Work. These requirements are only applicable to Georgia agriculture teachers. Research in other states should use the specific program requirements for that area.

Objective Three Conclusions

Objective three sought to describe the job satisfaction and career commitment of early-career agriculture teachers in the state of Georgia. In the area of job satisfaction, Georgia early-career agricultural teachers were slightly satisfied with their jobs. This finding is in line with previous research in agricultural education concerning teachers in other states (Blackburn, Bunch, & Haynes, 2017; Hasselquist, Herndon & Kitchel, 2017; Sorenson & McKim, 2014).

In the area of career commitment, Georgia early-career agriculture teachers showed moderate levels of commitment to the profession. Other research has suggested that career commitment should be considered when educating undergraduate teacher candidates, working with apprentice teachers, hiring first year teachers, and advising early career teachers (Knobloch & Whittington, 2003).

Objective Three Implications

Job satisfaction has been shown to have a negative relationship with teacher burnout, having a small increase in the amount of burnout among individuals who were dissatisfied with their jobs (Chenevey, Ewing, & Whittington, 2008). With moderate levels of job satisfaction and career commitment, Georgia early-career agriculture teachers should have moderate levels of retention. However, as a third of teachers in the state are in their first five years of teaching, turnover still occurs often. This implies that other factors such as personal changes (marriage,

child birth) or administrative changes (change of roles, expectations, or administration) may be related to retention of early career agriculture teachers.

Objective Three Recommendations

Although teachers are satisfied generally, further research is needed to investigate the specific sources of their satisfaction, conditions, or factors of their jobs that are the most and least satisfying. Agricultural education researchers should also be interested in motivators and barriers for individuals who are least satisfied with their jobs. It is recommended that professional development programs designed to recruit and retain agriculture teachers utilize this finding as a means to communicate to the public that many teachers report that they are satisfied with teaching agriculture. Future research should include differences in career commitment of different groups by personal factors such as gender and years of experience, and school factors such as administration, funding, salary and class size. A longitudinal trend study should be conducted to determine the relationship between career commitment and the length of time teachers actually stay in the classroom.

Objective Four Conclusions

Objective four sought to describe the relationship between personal characteristics and self-efficacy for early-career agriculture teachers in the state of Georgia. Using ANOVA, a statistically significant different was found between the age group of 27-28 and 29 and older in the area of FFA self-efficacy. Older teachers had lower levels of self-efficacy in the FFA construct. A difference in FFA self-efficacy was also found between traditionally certified and teachers with add-on certification for agricultural education. Teachers with traditional certification had higher levels of self-efficacy in the FFA construct.

As teachers with an add-on certification only had to pass the Georgia Assessment for Certification of Educators to teacher agricultural education, they may lack the background knowledge for developing the FFA component of agricultural education. While not evident by the data, many agriculture teachers in their first five years of teaching who 29 years old or older may have taught another subject and added on a certification in agricultural education.

Objective Four Implications

With a continuing shortage of traditionally certified agriculture teachers across the nation, many school districts will continue to utilize educators from other content areas to fill in the role of an agricultural education teacher. In order to have success for local programs, these teachers must be supported by other teachers and state staff members through professional development.

With traditionally certified teachers having higher levels of self-efficacy in FFA, the implication exists that preservice agricultural education programs are likely preparing teachers adequately in this area.

Objective Four Recommendations

In order to better serve early-career agriculture teachers, professional development should be targeted at those who came into the profession later in life or from another content area. Further research into the needs of teachers from content areas should be conducted as they may lack sufficient knowledge to recognize deficiencies in their agricultural education program (Roberts & Dyer, 2004).

Objective Five Conclusions

Objective five was to describe the relationship between self-efficacy and job satisfaction and career commitment for early-career agriculture teachers in the state of Georgia. Multiple

regression was utilized to answer this research question. Classroom and laboratory self-efficacy was a significant predictor of job satisfaction. Since managing the classroom and teaching is a significant portion of the job, those teachers with higher self-efficacy are more satisfied with teaching. This supports previous research regarding classroom self-efficacy and job satisfaction (Blackburn & Robinson, 2008; Klassen & Chiu, 2010).

A similar finding occurred in the area of career commitment. Classroom and laboratory self-efficacy was a significant predictor of career commitment. Once again, a teacher who has high self-efficacy for the classroom responsibilities may be more committed to the profession and can envision themselves persisting in this career path.

Objective Five Implications

Previous studies in agricultural education have identified classroom management as a major issue faced by early career agriculture teachers (Myers et al., 2005; Talbert et al., 1994). The significant relationship between career commitment and classroom and laboratory self-efficacy suggests early career agriculture teachers with lower classroom and laboratory self-efficacy may have challenges with this area of the agricultural education program which reduces their commitment to remain in the profession.

Objective Five Recommendations

Bandura (1977) noted four types of experiences that can build self-efficacy. The first is mastery experiences. While the opportunity for successful mastery experiences may be less available for teachers currently in the profession, providing an excellent placement for apprentice teachers would be helpful in increasing their future self-efficacy in the classroom.

The second source of self-efficacy is vicarious experiences. By observing another successful teacher overcome a challenge similar to their own, a teacher can develop self-efficacy

for that task in their classroom. Administrators should provide early career teachers the opportunity to observe a successful teacher with a group of students that may be hard to work with or manage. This can also be applied specifically to agricultural education by observing other successful agriculture teachers with content specific tasks that have proved difficult.

A third source of self-efficacy is verbal and social persuasions. While the concept of a mentor for young teachers is not new, many schools cannot provide an agriculture teacher as a mentor. State agricultural education department should work to develop relationships between new and experienced teachers that can provide encouragement. With the advent of social media, early career teachers can connect with experienced teachers around the country to provided verbal and social motivation.

The fourth source of self-efficacy is physiological and emotional states. This includes things such as heart rate as well as anxiety. Moulding, Stewart, and Dunmeyer (2014) indicate that most teacher preparation programs generally do not involve the physiological and affective states. This could be implemented as a part of the reflective process before and after teaching during the student teaching apprenticeship or during a teacher evaluation from an administrator.

Further research should address the sources of self-efficacy to determine other sources of self-efficacy and way to integrate the four sources of self-efficacy into support and professional development for early career agriculture teachers.

REFERENCES

Adams, M. R. (1982). *Selected Oklahoma agricultural teachers' attitudes toward FFA proficiency awards* [Unpublished master's thesis] Panhandle State University.

Anderson, K. S. (2008). *Predictors and program outcomes of empowering practices of FFA chapter advisors.* [Unpublished doctoral dissertation]. University of Georgia.

Armor, D., Conroy-Oseguera, P., Cox M., King, N., McDonnell, L., Pascal, A. Pauly, E., & Zellman, G. (1976). Analysis of the school preferred reading programs in selected Los Angeles minority schools (Report No. R-2007-LAUSD). Santa Monica, CA: Rand Corporation.

Aschenbrener, M. S., Garton, B. L., & Ross, A. L. (2010). Early career agriculture teachers' efficacy toward teaching students with special needs. *Journal of Agricultural Education, 51*(4), 105-117. doi: 10.5032/jae.2010.04105

Ary, D., Jacobs, L. C., & Sorensen, C. (2010). *Introduction to research in education*. Cengage Learning.

Ashton, P. T., Buhr, D., & Crocker, L. (1984). Teachers' sense of efficacy: A self or norm-referenced construct? *Florida Journal of Educational Research, 26*(1), 29–41.

Ashton, P., & Webb, R. (1986). Making a difference: Teachers' sense of efficacy and student achievement. New York, NY: Longman.

Azhar, M., & Asdaque, M. M. (2011). Job satisfaction of secondary school teachers: A comparative analysis of gender, urban and rural schools. *Asian Social Science, 7*(8), 203-206. https://doi.org/10.5539/ass.v7n8p203

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

Bandura, A. (1986).*Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall

Bandura, A. (1994) Self-efficacy, in: R. J. Corsini (Ed.) *Encyclopedia of psychology* (New York, Wiley), 368–369.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: W.H. Freeman.

Bandura, A. (2002), Social cognitive theory in cultural context. *Applied Psychology, 51*: 269-290. doi:10.1111/1464-0597.00092

Bandura, A. (2006). Guide for constructing self-efficacy scales. In F. Pajares & T. Urdan (Eds.), *Adolescence and education, Vol. 5: Self-efficacy beliefs of adolescents* (pp. 307-337). Greenwich, CT: Information Age.

Barnabé, C., & Burns, M. (1994). Teachers' job characteristics and motivation. *Educational Research, 36*(2), 171-185. doi: 10.1080/0013188940360206

Barrick, R. K., Arrington, L. R., Heffernan, T., Hughes, M., Moody, L., Ogline, P., & Whaley, D. (1992). *Experiencing agriculture: A handbook on supervised agricultural experience.* Alexandria, VA: The National Council for Agricultural Education.

Bedel, E. F. (2008). Interactions among attitudes toward teaching and personality constructs in early childhood preservice teachers. *Journal of Theory and Practice in Education, 4*, 31–48. http://eku.comu.edu.tr/index/4/1/efbedel.pdf

Bender, R. E., Taylor, R.E., Hansen, C. K. & Newcomb, L. H. (1979). *The FFA and you: Your guide to learning*. Danville, IL: The Interstate Printers & Publishers, Inc.

Berman, P., McLaughlin, M. W., Bass-Golod, G. V., Pauly, E., & Zellman, G. L. (1977). *Federal programs supporting educational change: Vol. VII. Factors affecting implementation and continuation*. RAND Corporation.

Bishay, A. (1996) Teacher motivation and job satisfaction: a study employing the experience sampling method. *Journal of Undergraduate Sciences 3*, 147–54.

Blackburn, J. J., & Robinson, J. S. (2008). Assessing teacher self-efficacy and job satisfaction of early career agriculture teachers in Kentucky. *Journal of Agricultural Education, 49*(3), 1-11. doi: 10.5032/jae.2008.03001

Blackburn, J. J., Bunch, J.C., & Haynes, J. C. (2017). Assessing the relationship of teacher self-efficacy, job satisfaction, and perception of work-life balance of Louisiana agriculture teachers. *Journal of Agricultural Education, 58*(1), 14-35. https://doi.org/10.5032/jae.2017.01014

Boone, H. N., Jr., & Boone, D. A. (2007). Why do agricultural education teachers continue to teach? A qualitative analysis. *Proceedings of the AAAE Research Conference*, (34), 561-570.

Borich, G. D. (1980). A needs assessment model for conducting follow-up studies. *Journal of Teacher Education, 41*(3), 39-42. doi:10.1177/002248718003100310

Bowen, B. E. (1981). Factors associated with the job satisfaction of teacher educators in agriculture. *Journal of Agricultural Education*, *22*(3), 44-53. doi:10.5032/jaatea.1981.03044

Brayfield, A. H., & Rothe, H. F. (1951). An index of job satisfaction. *The Journal of Applied Psychology, 35*, 307-311. https://doi.org/10.1037/h0055617

Bryk, A. S., & Driscoll, M. E. (1988). *The high school as community: Contextual influences and consequences for students and teachers*. Madison, WI: National Center on Effective Secondary Schools

Burris, S., McLaughlin, K. E., McCulloch, A., Brashears, T., & Fraze, S. (2010). A comparison of first and fifth year agriculture teachers on personal teaching efficacy, general teaching efficacy and content efficacy. *Journal of Agricultural Education, 51*(1), 22-31. doi: 10.5032/jae.2010.01022

Caprara, G. V., Barbaranelli, C., Borgogni, L., Petitta, L., & Rubinacci, A. (2003). Teachers', school staff's and parents' efficacy beliefs as determinants of attitude toward school. *European Journal of Psychology of Education, 18*, 15−31. https://doi.org/10.1007/BF03173601

Caprara, G. V., Barbaranelli, C., Borgogni, L., & Steca, P. (2003). Efficacy beliefs as determinants of teachers' job satisfaction. *Journal of Educational Psychology, 95*, 821–832. https://doi.org/10.1037/0022-0663.95.4.821

Carraher, S. M., & Buckley, M. R. (1996). Cognitive complexity and the perceived dimensionality of pay satisfaction. *Journal of Applied Psychology, 81*(1), 102. https://doi.org/10.1037/0021-9010.81.1.102

Chenevey, J. L., Ewing, J. C., & Whittington, M. S. (2008). Teacher burnout and job satisfaction among agricultural education teachers. *Journal of Agricultural Education, 49*(3), 12-22. doi: 10.5032/jae.2008.03012

Cheng, Y. (1994). Locus of control as an indicator of hong kong teachers' job attitudes and perceptions of organizational characteristics. *The Journal of Educational Research, 87*(3), 180. https://doi.org/10.1080/00220671.1994.9941240

Claycomb, D., & Stewart, B. (1980). Meaning and value of work and job satisfaction of young/adult farmers and vocational agriculture instructors. *The Journal of the American*

Association of Teacher Educators in Agriculture, 21(1), 40-45. doe:10.5032/jaatea.1980.01040

Coladarci, T. (1992). Teachers' sense of efficacy and commitment to teaching. *The Journal of Experimental Education, 60*, 323 – 337. https://doi.org/10.1080/00220973.1992.9943869

Cole, L. (1984). Oregon vocational agriculture teacher placement and retention factors. *Journal of Agricultural Education, 25*(3), 2–12. doi: 10.5032/jaatea.1994.03002

Connors, J. J. (2013). A history of future farmer organizations around the world. *Journal of Agricultural Education, 54*(1), 60-71. doi: 10.5032/jae.2013.01060

Croom, D. B. (2008). The development of the integrated three-component model of agricultural education. *Journal of Agricultural Education, 49*(1), 110-120. https://doi.org/10.5032/jae.2008.01110

Currall, S. C., Towler, A. J., Judge, T., & Kohn, L. (2005). Pay satisfaction and organizational outcomes. *Personnel Psychology*, *58*, 613−640. https://doi.org/10.1111/j.1744-6570.2005.00245.x

Darling-Hammond, L. (1990). Teaching and knowledge: Policy issues posed by alternate certification for teachers. *Peabody Journal of Education, 67*(3), 123- 154. doi.: 10.1080/01619569009538694

Day, C. (2008). Committed for life? Variations in teachers' work, lives and effectiveness. *Journal of Educational Change, 9*(3), 243-260. doi: 10.1007/s10833-007-9054-6

Day, C., Elliot, B., & Kington, A. (2005). Reform, standards and teacher identity: Challenges of sustaining commitment. *Teaching and Teacher Education, 21*, 563-577. http://dx.doi.org/10.1016/j.tate.2005.03.001

Delle Fave, A. & Massimini, F. (2005). The investigation of optimal experience and apathy. *European Psychologist, 10*(4), 264–274. doi:10.1027/1016-9040.10.4.264

Delnero, J., & Montgomery, D. (2001). Perceptions of work among California agriculture teachers. *Journal of Agricultural Education, 42*(2), 56-67. doi: 10.5032/jae.2001.02056

DeVellis, R. (2003). *Scale development: Theory and applications*. New York, NY: Russell Sage Foundation

Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). *Internet, phone, mail, and mixed-mode surveys: the tailored design method*. John Wiley & Sons.

Dinham, S., & Scott, C. (1998). A three domain model of teacher and school executive career satisfaction. *Journal of Educational Administration, 36*, 362-378. https://doi.org/10.1108/09578239810211545

Duncan, D., & Ricketts, J. (2008). Total program efficacy: A comparison of traditionally and alternatively certified agriculture teachers. *Journal of Agriculture Education, 49*(4), 38-46. doi: 10.532/jae.2008.04038.

Eck, C. J., & Edwards, M. C. (2019). Teacher shortage in school-based, agricultural education (SBAE): A historical review. *Journal of Agricultural Education, 60*(4), 223-239. doi: 10.5032/jae.2019.04223

Edwards, M. C., & Briers, G. E. (2001). Cooperating teachers' perceptions of important elements of the student teaching experience: A focus group approach with quantitative follow-up. *Journal of Agricultural Education, 42* (3), 31-42. doi: 10.5032/jae.2001.03030.

Emmer, E., & Aussiker, A. (1990). School and classroom discipline programs: How well do they work? In O. C. Moles (Ed.), *Student discipline strategies: Research and practice* (pp. 129–166). Albany, NY: SUNY Press.

Fenech, M., Sumsion, J., Robertson, G., & Goodfellow, J. (2008). The regulatory environment: A source of job (dis)satisfaction for early childhood professionals? *Early Child Development and Care, 178*(1), 1-14. doi:10.1080/03004430600597222

Firestone, W. A. (1996). Images of teaching and proposals for reform: A comparison of ideas from cognitive and organizational research. *Educational Administration Quarterly, 32*(2), 209 – 235. doi:10.1177/0013161X96032002003

Foster, B. B. (2001). Choices: A dilemma of women agricultural education teachers. *Journal of Agricultural Education, 42*(3), 1-10. doi: 10.5032/jae.2001.03001

Fournet, G. P., Distefano Jr, M., & Pryer, M. W. (1966). Job Satisfaction: Issues and problems. *Personnel psychology, 19*(2), 165-183. https://doi.org/10.1111/j.1744-6570.1966.tb02026.x

Gibson, S., & Dembo, M. (1984).Teacher efficacy: A construct validation. *Journal of Educational Psychology, 76*, 569–582. https://doi.org/10.1037/0022-0663.76.4.569

Goddard, R., Hoy, W., & Hoy, A. (2000). Collective teacher efficacy: Its meaning, measure, and impact on student achievement. *American Educational Research Journal, 37*(2), 479-507. https://doi.org/10.3102/00028312037002479

Gosnell, S. (2000). *Determinant of career satisfaction among federal employees*. Paper presented at the seminar on public policy. Georgia Institute of Technology., Georgia, USA.

Grady, T. (1985). Job satisfaction of vocational agricultural teachers in Louisiana. *Journal of the American Associations of Teacher Educators in Agriculture, 26*(3), 70-78. doi:10.5032/jaetea.1985.03070

Stripling, C. T., & Ricketts, J.C. (2016). Research priority 3: Sufficient Scientific and Professional Workforce That Addresses the Challenges of the 21st Century. In Roberts,

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

Grant, L. W. (2006). Persistence and self-efficacy: A key to understanding teacher turnover. *The Delta Kappa Gamma Bulletin, 72*(2), 50-54.

Green Agricultural Education Act, SB320, (2017). http://www.legis.ga.gov/Legislation/20172018/178849.pdf

Greiman, B. C., Walker, W. D., & Birkenholz, R. J. (2005). Influence of the organizational environment on the induction stage of teaching. *Journal of Agricultural Education, 46*(3), 95–106. doi:10.5032/jae.2005.03095

Hackman, J. R., & Oldham, G. R. (1975). Development of the job diagnostic survey. *Journal of Applied Psychology, 60,* 159 –170. https://doi.org/10.1037/h0076546

Hamilton, R. L., & Swortzel, K. A. (2007). Assessing Mississippi AEST teachers' capacity for teaching science integrated process skills. *Journal of Southern Agricultural Education Research, 57*(1), 1-12.

Hartfield, K. N. (2011). *Perceived levels of teacher self-efficacy among secondary Arizona agricultural education teachers*. [Unpublished master's thesis]. University of Arizona.

Hasselquist, L., Herndon, K., & Kitchel, T. (2017). School culture's influence on beginning agriculture teachers' job satisfaction and teacher self-efficacy. *Journal of Agricultural Education, 58*(1), 267-279. https://doi.org/10.5032/jae.2017.01267

Heald, F. E. (1929). Our leadership in agricultural education Rufus W. Stimson, pioneer. *The Agricultural Education Magazine. 1*(3), 3, 4, 14, 15.

Hennessy, K. D., & Lent, R. W. (2008). Self-efficacy for managing work-family conflict validating the English language version of a Hebrew scale. *Journal of Career Assessment, 16*(3), 370-383. doi: 10.1177/1069072708317383

Herzberg, F., Mausner, B., Peterson, R.O., Capwell, D.F. (1957). *Job Attitudes: Review of research and opinion*. Pittsburgh, PA: Psychological Services of Pittsburgh.

Hopkins, D., & Stern, D. (1996). Quality teachers, quality schools: International perspectives and policy implications. *Teaching and Teacher Education, 12*, 501 – 517. doi:10.1016/0742-051X(95)00055-O

Hoy, W. K., & Woolfolk, A. E. (1993). Teachers' sense of efficacy and the organizational health of schools. *Elementary School Journal, 93*, 335-372. https://doi.org/10.1086/461729

Hughes, B. (2019). *Georgia Agricultural Education 2018-2019 Annual Report* Atlanta, GA: GA DOE. https://www.georgiaffa.org/docs/20637_2018-2019 Georgia Ag Ed Annual Report.pdf

Jennings, M. A. (2001). *A study of the opinions of selected teachers concerning job satisfaction and its influence on the teacher shortage in a representative Mississippi delta county* [Unpublished doctoral dissertation]. Delta State University.

Jewell, L. R., Beavers III, K. C., Malpiedi, B. J., & Flowers, J. L. (1990). Relationships between levels of job satisfaction expressed by North Carolina vocational agricultural teachers and their perceptions toward the agricultural education teaching profession. *Journal of Agricultural Education, 31*(1), 52–57. doi: 10.5032/jae.1990.01052

Joerger, R. M. (2002). A comparison of the in–service education needs of two cohorts of beginning Minnesota agricultural education teachers. *Journal of Agricultural Education, 43*(3), 11–24. doi: 10.5032/jae.2002.03011

Kelsey, K. D. (2006). Teacher attrition among women in secondary agricultural education. *Journal of Agricultural Education, 47*(3), 117-129. doi: 10.5032/jae.2006.03117

Kim, S., & Yang, S. (2016). Childcare teachers' job satisfaction: Effects of personality, conflict handling, and organizational characteristics. *Social, Behavior, and Personality: An International Journal, 44*(2), 177 – 184. https://doi.org/10.2224/sbp.2016.44.2.177

Kitchel, T., Smith, A. R., Ball, A. L., Robinson, J. S., Lawver, R. G., Park, T. D., & Schell, A. (2012). Teacher job satisfaction and burnout viewed through social comparisons. *Journal of Agricultural Education, 53*(1), 31-44. doi: 10.5032/jae.2012.01031

Klassen, R. M., & Chiu, M. M. (2010). Effects on teachers' self-efficacy and job satisfaction: Teacher gender, years of experience, and job stress. *Journal of Educational Psychology, 102*(3), 741–756. https://doi-org.spot.lib.auburn.edu/10.1037/a0019237

Klusmann, U., Kunter, M., Trautwein, U., Lüdtke, O., & Baumert, J. (2008). Teachers' occupational well-being and quality of instruction: The important role of self-regulatory patterns. *Journal of Educational Psychology, 100*(3), 702. doi: 10.1037/0022-0663.100.3.702

Knobloch, N. A. (2001). The influence of peer teaching and early field experiences on teaching efficacy beliefs of preservice educators in agriculture. *Proceedings of the National Agricultural Education Research Conference*, New Orleans, LA, 28, 119-131.

Knobloch, N. A. (2006). Exploring relationships of teachers' sense of efficacy in two student teaching programs. *Journal of Agricultural Education, 47*(2), 36-47. doi: 10.5032/jae.2006.02036

Knobloch, N. A., & Whittington, M. S. (2002). Novice teachers' perceptions of support, teacher preparation quality, and student teaching experience related to teacher efficacy. *Journal*

of Vocational Education Research, 27(3), 331-341. https://doi.org/10.5328/JVER27.3.331

Knobloch, N. A., & Whittington, M. S. (2003). The influence of the initial ten weeks of the school year of novice teacher efficacy in agricultural education. *NACTA Journal, 47*(4), 16-21.

Kotrlik, J. W., & Malek, A. P. (1986). Job satisfaction of vocational agriculture teachers in the Southeastern United States. *Journal of the American Association of Teacher Educators in Agriculture, 27*(1), 33-38.doi: 10.5032/jaatea.1986.01027

Langley, G. C., Martin, M., & Kitchel, T. (2014). Novice agriculture teachers' general self efficacy and sense of community connectedness. *Journal of Agricultural Education, 55*(4), 1-11. doi: 10.5032/jae.2014.04001

LaVergne, D. D., Larke, A., Elbert, C. D. & Jones, W. A. (2012). The effect of teacher demographic and personal characteristics on perceptions of diversity inclusion in agricultural education programs. *Journal of Agricultural Education, 53*(3),14-35, doi: 10.5032/jae.2012.03084

Lawver, R. G., & Torres, R. M. (2012). An analysis of post–secondary agricultural education students' choice to teach. *Journal of Agricultural Education, 53*(2), 28-42. doi: 10.5032/jae.2014.04001

Lawver, R. G., Foster, D. D., & Smith, A. R. (2018). *Status of the U.S. Supply and Demand for Teachers of Agricultural Education, 2014 - 2016*.

Leising, J. G., & Zilbert, E. E. (1985). Factors associated with supervised occupational experience in California vocational agriculture programs. *Journal of the American*

Association of Teacher Educators in Agriculture, 26(2), 56-64. doi:10.5031/jaatea.1985.02056

Lindner, J.R., Murphy, T.H., Briers, G.E. (2001). Handling nonresponse in social research. *Journal of Agricultural Education. 42*(4), 43-53. doi: 10.5032/jae.2001.04043.

McKim, B. R., & Saucier, P. R. (2013). A 20-year comparison of teachers' agricultural mechanics laboratory management competency. *Journal of Agricultural Education, 54*(1), 153-166. doi: 10.5032/jae.2013.01153

Mckim, A.J. & Velez, J.J. (2015). Exploring the relationship between self-efficacy and career commitment among early career agriculture teachers. *Journal of Agricultural Education.* 56(1), 127-140 doi: 10.5032/jae.2015.01127

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

McKim, A. J., & Velez, J. J. (2017). Developing self-efficacy: exploring preservice coursework, student teaching, and professional development experiences. *Journal of Agricultural Education, 58*(1), 172-185. https://doi.org/10.5032/jae.2017.01172

McKim, A. J., Velez, J. J., & Clement, H. Q. (2017). Exploring relationships between personal variables, programmatic variables, and self-efficacy in school-based agricultural education. *Journal of Agricultural Education, 58*(2), 284-298. https://doi.org/10.5032/jae.2017.02284

Michaelowa, K. (2002). *Teacher job satisfaction, student achievement and the cost of primary education in Francophone Sub -Saharan Africa*. Paper presented at the Hamburgischer Welt-Wirtschafts Archiv(HWWA) discussion paper 188, Hamburge Institute of International Economics.

Miller, T. R. (1980). The changing status of supervised occupational experience in vocational agriculture in North Carolina. *Journal of the American Association of Teacher Educators in Agriculture, 21*(1), 13-18. doi: 10.5032/jaatea.1980.01013

Miller, W.W., Williams, D. L., & Sprouse, D. W. (1984). Factors concerning student's perceptions of teaching vocational agriculture. *Journal of the American Association of Teacher Educators in Agriculture, 25*(3),13–21. doi: 10.5032/jaatea.1984.03013

Milner, H.R. (2002). Affective and social issues among high achieving African American students: Recommendations for teachers and teacher education. *Action in Teacher Education, 24*(1), p. 81-89. https://doi.org/10.1080/01626620.2002.10463269

Mwamwenda, T. S. (1997). Teacher gender differences in job satisfaction in Transkel. *Research in Education, 58*, 75-77. https://doi.org/10.1177/003452379705800108

Moore, G. E., & Borne, C. (1986). The secondary vocational agriculture curriculum from 1890 to 1980. *Journal of American Association of Teacher Educators in agriculture, 27*(3), 8-19. doi: 10.5032/jaatea.1986.03008

Monshi Toussi, M. T., & Ghanizadeh, A. (2012). A study of EFL teachers' locus of control and self-regulation and the moderating role of self-efficacy. *Theory and Practice in Language Studies, 2*(11), 2363-2371. doi:10.4304/ tpls.2.11. 2363-2371

Mortimer, J. T., & Lorence, J. (1979). Occupational experience and the self-concept—A longitudinal study. *Social Psychology Quarterly, 42*, 307–323. https://doi.org/10.2307/3033802

Moulding L. R., Stewart P. W., Dunmeyer M. L. (2014). Pre-service teachers' sense of efficacy: relationship to academic ability, student teaching placement characteristics, and mentor support. *Teaching and Teacher Education. 41*, 60–66. 10.1016/j.tate.2014.03.007

Mowday, R. T., Steers, R. M., & Porter, L. W. (1979). *The measurement of organizational commitment. Journal of Vocational Behavior, 14*(2), 224-247. https://doi.org/10.1016/0001-8791(79)90072-1

Mundt, J. P. (1991). The induction year: A naturalistic study of beginning teachers of agriculture in Idaho. *Journal of Agricultural Education, 32*(1), 18-23. doi:10.5032/jae.1991.01018

Murray, K., Flowers, J., Croom, B., & Wilson, B. (2011). The agricultural teacher's struggle for balance between career and family. *Journal of Agricultural Education, 52*(2), 107-117. doi:10.5032/jae.2011.02107

Myers, B. E., Dyer, J. E. & Washburn, S. G., (2005). Problems of beginning agriculture teachers. *Journal of Agricultural Education, 46*(3), 47-55. doi: 10.5032/jae.2005.03047

National FFA Organization. (2016). What is FFA. National FFA Organization. https://www.ffa.org/about/what-is-ffa

National FFA Organization. (2018). *2018-2019 Official FFA Manual*. Indianapolis, IN.

National FFA Organization's Federal Charter Amendments Act, Pub. L. No. 116 - 7 - 133 Stat. 478, 479, 480, 481, 482 and 483 (2019). https://www.congress.gov/bill/116th-congress/house-bill/439/text/pl?overview=closed

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

Odell, K. S., Cochran, J. E., Lawrence, L. D., & Gartin, S. A. (1990). The job and marital satisfaction of secondary agriculture teachers and their spouses. *Journal of Agricultural Education, 31*(3), 14-18. doi: 10.5032/jae.1990.03014

Osborne, E., & Dyer, J. E. (1995). Attitudes of Illinois high school science teachers toward agricultural industry and educational programs in agriculture. *Proceedings of the National Agricultural Education Research Meeting*. Denver, CO.

Pajares (2002). Overview of social cognitive theory and of self-efficacy. http://www.emory.edu/EDUCATION/mfp/eff.html

Park, I. (2005). Teacher commitment and its effects on student achievement in American high schools. *Educational Research and Evaluation, 11*(5), 461-485. https://doi.org/10.1080/13803610500146269

Perie, M., & Baker, D. P. (1997). Job satisfaction among america's teachers: Effects of workplace conditions, background characteristics, and teacher compensation. Washington, DC: NCER.

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

Rayfield, J., & Croom, B. (2010). Program needs of middle school agricultural education teachers: A delphi study. *Journal of Agricultural Education, 51*(4), 131. doi: 10.5032/jae.2010.04131

Raudenbush, S. W., Rowan, B., & Cheong, Y. F. (1992). Contextual effects on the self-perceived efficacy of high school teachers. *Sociology of Education, 65*, 150-167. https://doi.org/10.2307/2112680

Reschly, A. L., Huebner, E. S., Appleton, J. J., & Antaramian, S. (2008). Engagement as flourishing: The contribution of positive emotions and coping to adolescents' engagement at school and with learning. *Psychology in the Schools, 45*(5), 419–431. doi:10.1002/pits.20306

Retallick, M. S. (2010). Implementation of supervised agricultural experience programs: the agriculture teachers' perspective. *Journal of Agricultural Education, 51*(4), 59-70. doi:10.5031/jae.2010.04059

Riggs, I. M., & Enochs, L. G. (1990). Toward the development of an elementary teacher's science teaching efficacy belief instrument. *Science Education, 74*(6), 625–637. doi:10.1002/sce.3730740605

Ritz, R., Burris, S., & Brashears, T. (2013). The effects of a time management professional development seminar on stress and job satisfaction of beginning agriscience teachers in west Texas. *Journal of Agricultural Education, 54*(3), 1-14. doi: 10.5032/jae.2013.03001

Roberts, T. G., & Dyer, J. E. (2004). Inservice needs of traditionally and alternatively certified agriculture teachers. *Journal of Agricultural Education, 45*(40), 57-70. doi:10.5032/jae.2004.04057

Roberts, T. G., Harlin, J. F., & Ricketts, J. C. (2006). A longitudinal examination of teaching efficacy of agricultural science student teachers. *Journal of Agricultural Education, 47*(2), 81-92. doi: 10.5032/jae.2

Roberts, T. G., & Harlin, J. F. (2007). The project method in agricultural education: Then and now. *Journal of Agricultural Education, 48*(3), 46–56. doi:10.5032/jae.2007.03046006.02081

Roberts, T. G., Harlin, J. F., & Briers, G. E. (2008). Peer modeling and teaching efficacy: The influence of two student teachers at the same time. *Journal of Agricultural Education, 49*(2), 13-26. doi: 10.5032/jae.2008.02013

Robinson, J. S., Krysher, S., Haynes, J. C., & Edwards, M. C. (2010). How Oklahoma State University students spent their time student teaching in agricultural education: A fall

versus spring semester comparison with implications for teacher education. *Journal of Agricultural Education, 51*(4), 142–153. doi:10.5032jae/2010.04142

Rocca, S. J., & Washburn, S. G. (2006). Comparison of teacher efficacy among traditionally and alternatively certified agriculture teachers. *Journal of Agricultural Education, 47*(3), 58-69. doi: 10.5032/jae.2006.03058

Rodriguez, J. F. (1997). *Self-efficacy of preservice and beginning agricultural education teachers in Ohio*. [Unpublished doctoral dissertation]. The Ohio State University.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*, 68–78. https://doi.org/10.1037/0003-066X.55.1.68

Sadowski, C. J., & Woodward, H. R. (1983). Teacher locus of control and classroom climate: A cross-lagged correlational study. *Psychology in the Schools*, *20*(4), 506–509. https://doi-org.spot.lib.auburn.edu/10.1002/1520-6807(198310)20:4<506::AID-PITS2310200419>3.0.CO;2-W

Sargent, T., & Hannum, E. (2005). Keeping teachers happy: Job satisfaction among primary school teachers in rural northwest China. *Comparative Education Review, 49*(2), 173–204. doi:10.1086/428100

Smith, K. E. (1997). Student teachers' beliefs about developmentally appropriate practice: Pattern, stability, and the influence of locus of control. *Early Childhood Research Quarterly, 12*, 221–243. https://doi.org/10.1016/S0885-2006(97)90015-6

Smith, A. R., Lawver, R. G., & Foster, D. D. (2019). National agricultural education supply and demand study, 2018 Executive Summary. http://aaaeonline.org/Teacher-Supply-andDemand

Soodak, L., & Podell, D. (1996). Teaching efficacy: Toward the understanding of a multi-faceted construct. *Teaching and Teacher Education, 12*, 401–412. https://doi.org/10.1016/0742-051X(95)00047-N

Sorensen, T. J., & McKim, A. J. (2014). Perceived work-life balance ability, job satisfaction, and professional commitment among agriculture teachers. *Journal of Agricultural Education, 55*(4), 116-132. doi: 10.5032/jae.2014.04116

Sorensen, T.J., Lambert, M.D. & McKim, A.J. (2014). Examining Oregon Agriculture Teachers' Professional Development Needs by Career Phase. *Journal of Agricultural Education, 55*(5), 140-154. doi: 10.5032/jae.2014.05140

Sorensen, T. J., McKim, A. J., & Velez, J. J. (2016). A national study of work-family balance and job satisfaction among agriculture teachers. *Journal of Agricultural Education, 57*(4), 146-159. https://doi.org/10.5032/jae.2016.04146

Spear, M., Gould, K., & Lee, B. (2000). *Who would be a teacher? A review of factors motivating and demotivating prospective and practicing teachers*. Slough: National Foundation for Educational Research.

Spector, P. E. (1997). *Job satisfaction: Application, assessment, causes, and consequences*. Thousand Oaks, CA:Sage.

Stimson, R. (1915). The Massachusetts home project plan of vocational agricultural education. *The School Review. 23*(7), 474-478. https://doi.org/10.1086/436505

Stimson, R. W. (1919). *Vocational agricultural education by home projects*. New York, NY: Macmillan.

Stimson, R. W. (1922). The relationship of occupational analysis to the project method. *Vocational Education Magazine, 1*(1), 12-15.

Stripling, C. T., Ricketts, J. C., Roberts, T. G., & Harlin, J. F. (2008). Preservice agricultural education teachers' sense of teaching self-efficacy. *Journal of Agricultural Education, 49*(4), 120-130. doi: 10.5032/jae.2008.04120

Swan, B. G. (2005). *The relationship between the 2004 Ohio State University Agricultural Education student teachers' learning style, teacher heart, and teacher sense of efficacy*. [Unpublished doctoral dissertation]. The Ohio State University.

Swan, B. G., Wolf, K. J., & Cano, J. (2011). Changes in teacher self-efficacy from the student teaching experience through the third year of teaching. *Journal of Agricultural Education, 52*(2), 128-139. doi: 10.5032/jae.2011.02128

Sweitzer, H. F., & King, M. A. (2009). *The successful internship: Personal, professional, and civic development*. Belmont, CA: Brooks/Cole.

Swortzel, K. A. (1996). Perceptions regarding planning activities and supervision strategies for supervised agricultural experience programs. *Journal of Agricultural Education, 37*(2), 47- 55. doi:10.5032/jae.1996.02047

Taft, R. (1997). Coping with unfamiliar cultures. In N. Warren (Ed), *Studies in cross- cultural psychology*, *1*, 125-153. London. England: Academic Press.

Talbert, B. A., Camp, W. G., & Heath-Camp, B. (1994) A year in the lives of three beginning agriculture teachers. *Journal of Agricultural Education, 35*(2), 31-36. doi: 10.5032/jae.1994.02031

Talbert, B. A., Vaughn, R., Croom, D. B., & Lee, J. S. (2007). *Foundations of agricultural education*. Professional Educators Publications.

Thobega, M., & Miller, G. (2003). Relationship of instructional supervision with agriculture teachers' job satisfaction and their intention to remain in the teaching profession. *Journal of Agricultural Education, 44*(4), 57-66. doi: 10.5032/jae.2003.04057

Thompson, C., & King, D. (2013). Ag teachers in short supply. https://newswire.caes.uga.edu/story.html?storyid=4659&shttps://newswire.caes.uga.edu/story.html?storyid=4659&story=Teacher-shortagetory

Trentham, L., Silvern, S., & Brogdon, R. (1985). Teacher efficacy and teacher competency ratings. *Psychology in the Schools*, *22*, 343–352. https://doi.org/10.1002/1520-6807(198507)22:3<343::AID-PITS2310220317>3.0.CO;2-0

Tschannen-Moran, M., Woolfolk-Hoy, A., & Hoy, W. (1998). Teacher Efficacy: Its Meaning and Measure. *Review of Educational Research, 68*(2), 202-248. doi: 10.3102/00346543068002202

Tschannen-Moran, M., & Woolfolk Hoy, A. (2001). Teacher efficacy: Capturing and elusive construct. *Teaching and Teacher Education, 17*, 783-805. https://doi.org/10.1016/S0742-051X(01)00036-1

Tschannen-Moran, M., & Hoy, A. W. (2007). The differential antecedents of self-efficacy beliefs of novice and experienced teachers. *Teaching and Teacher Education, 23*(6), 944–956. https://doi.org/10.1016/j.tate.2006.05.003

Tummons, J. D., Langley, G. C., Reed, J. J. & Paul, E. E. (2017). Concerns of female preservice teachers in teaching and supervising the agricultural mechanics laboratory. *Journal of Agricultural Education, 58*(3), 19-36. https://doi.org/10.5032/jae.2017.03019

Walker, W. D., Garton, B. L., & Kitchel, T. J. (2004). Job satisfaction and retention of secondary agriculture teachers. *Journal of Agricultural Education, 45*(2), 28-38. doi:10.5032/jae.2004.02028

Warner, P. D. (1973). *A comparative study of three patterns of staffing with the Cooperative Extension Service organization and their association with organizational structure, organizational effectiveness, job satisfaction, and role conflict*. [Unpublished doctoral dissertation]. The Ohio State University, Columbus.

Watson, L. W. & Hillison, J. (1991) Temperament type and job satisfaction among selected West Virginia agricultural education teachers. *Journal of Agricultural Education, 32*(4), 25-30. DOI:10.5032/jae.1991.04025

Wheeler, J., & Knobloch, N.A. (2006). Relationship of teachers and program variables to beginning agriculture teachers' sense of efficacy. *Proceedings of the American Association for Agricultural Education Conference*, May 17- 19, (pp. 590-600). Charlotte, N.C.

Whittington, M. S., McConnell, E., & Knobloch, N. A. (2006). Teacher efficacy of novice teachers in agricultural education in Ohio at the end of the school year. *Journal of Agricultural Education, 47*(4), 26-38. doi: 10.5032/jae.2006.04027

Wiley, D. L. (1987). The relationship between work/nonwork role conflict and job-related outcomes: Some unanticipated findings. *Journal of Management, 13*(3), 467-472. doi: 10.1177/014920638701300303

Wilson, E. B., & Moore, G. E. (2007). Exploring the paradox of supervised agricultural experience programs in agriculture education. *Journal of Agricultural Education, 48*(4), 82-92. doi:10.5032/jae.2007.04082

Wolf, K. J. (2008). *Agricultural education teacher self-efficacy: A descriptive study of beginning agricultural education teachers in Ohio*. [Unpublished doctoral dissertation]. The Ohio State University, Columbus.

Wolf, K. J., Foster, D. D., & Birkenholz, R. J. (2010). The relationship between teacher self efficacy and the professional development experiences of agricultural education teacher candidates. *Journal of Agricultural Education, 51*(4), 38-48. doi: 10.5032/jae.2010.04038

Wolf, K. J. (2011). Agricultural education perceived teacher self-efficacy: A descriptive study of beginning agricultural education teachers. *Journal of Agricultural Education, 52*(2), 163-176. doi: 10.5032/jae.2011.02163

Woolfolk, A. (2007). *Education psychology*. Boston: Pearson Edition.

Woolfolk, A. E., Rosoff, B., & Hoy, W. K. (1990). Teachers' sense of efficacy and their beliefs about managing students. *Teaching and Teacher Education, 6*, 137-148. https://doi.org/10.1016/0742-051X(90)90031-Y

Woolfolk Hoy, A. W., Hoy, W. K. & Kurtz, N. M. (2008). Teacher's academic optimism: The development and test of a new construct. *Teaching and Teacher Education, 24*, 821-832. https://doi.org/10.1016/j.tate.2007.08.004

APPENDIX 1
IRB APPROVAL

Auburn University Human Research Protection Program

EXEMPTION REVIEW APPLICATION

The Auburn University Institutional Review Board has approved this Document for use from 04/25/2019 to ---------- Protocol # 19-132 EX 1904

For information or help completing this form, contact: **The OFFICE OF RESEARCH COMPLIANCE,**
Location: 115 Ramsay Hall **Phone:** 334-844-5966 **Email:** IRBAdmin@auburn.edu

Submit completed application and supporting material as one attachment to irbsubmit@auburn.edu.

1. PROJECT IDENTIFICATION **Date** 04/22/2019

a. Project Title Self-Efficacy of Early Career Agriculture Teachers and Its Relationship to Career Commitment and Job Satisfaction

b. Principal Investigator Michael Atkinson Degree(s) PhD
Rank/Title Graduate Student Department/School Curriculum and Teaching
Phone Number 478.494.9160 AU Email mra0026@auburn.edu
Faculty Principal Investigator (required if PI is a student) James Lindner
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Phone Number 334.844.6797 AU Email jrl0039@auburn.edu
Dept Head David Virtue Department/School Curriculum and Teaching
Phone Number 334.844.4434 AU Email dcv0004@auburn.edu

c. Project Personnel (other than PI) - Identify all individuals who will be involved with the conduct of the research and include their role on the project. Role may include design, recruitment, consent process, data collection, data analysis, and reporting). Attach a table if needed for additional personnel.

Personnel Name _____ Degree(s) _____
Rank/Title _____ Department/School _____
Role _____
AU affiliated? ☐ YES ☐ NO If no, name of home institution _____
Plan for IRB approval for non-AU affiliated personnel? _____

Personnel Name _____ Degree(s) _____
Rank/Title _____ Department/School _____
Role _____
AU affiliated? ☐ YES ☐ NO If no, name of home institution _____
Plan for IRB approval for non-AU affiliated personnel? _____

Personnel Name _____ Degree(s) _____
Rank/Title _____ Department/School _____
Role _____
AU affiliated? ☐ YES ☐ NO If no, name of home institution _____
Plan for IRB approval for non-AU affiliated personnel? _____

d. Training - Have all Key Personnel completed CITI human subjects training (including elective modules related to this research) within the last 3 years? ■ YES ☐ NO

e. Funding Source- Is this project funded by the investigator(s)? ■ YES ☐ NO
Is this project funded by AU? ☐ YES ■ NO If YES, identify source _____
Is this project funded by an external sponsor? ☐ YES ■ NO If YES, provide the name of the sponsor, type of sponsor (governmental, non-profit, corporate, other), and an identification number for the award.
Name _____ Type _____ Grant # _____

f. List other IRBs associated with this research and submit a copy of their approval and/or protocol.

2. Mark the category or categories below that describe the proposed research:

☐ 1. Research conducted in established or commonly accepted educational settings, involving normal educational practices. The research is not likely to adversely impact students' opportunity to learn or assessment of educators providing instruction. 104(d)(1)

■ 2. Research only includes interactions involving educational tests, surveys, interviews, public observation if at least ONE of the following criteria. (The research includes data collection only; may include visual or auditory recording; may NOT include intervention and only includes interactions). **Mark the applicable sub-category below (i, ii, or iii).** 104(d)(2)

☐ (i) Recorded information cannot readily identify the participant (directly or indirectly/linked); **OR**

- surveys and interviews: no children;
- educational tests or observation of public behavior: can only include children when investigators do not participate in activities being observed.

■ (ii) Any disclosures of responses outside would not reasonably place participant at risk; **OR**

☐ (iii) Information is recorded with identifiers or code linked to identifiers and IRB conducts limited review; no children. **Requires limited review by the IRB.***

☐ 3. Research involving Benign Behavioral Interventions (BBI)** through verbal, written responses (including data entry or audiovisual recording) from adult subjects who prospectively agree and ONE of the following criteria is met. (This research does not include children and does not include medical interventions) **Mark the applicable sub-category below (I, ii, or iii).** 104(d)(3)(i)

☐ (A) Recorded information cannot readily identify the subject (directly or indirectly/linked); **OR**

☐ (B) Any disclosure of responses outside of the research would not reasonably place subject at risk; **OR**

☐ (C) Information is recorded with identifiers and cannot have deception unless participant prospectively agrees. **Requires limited review by the IRB.***

☐ 4. Secondary research for which consent is not required: use of identifiable information or identifiable bio-specimen that have been or will be collected for some other 'primary' or 'initial' activity, if one of the following criteria is met. Allows retrospective and prospective secondary use. **Mark the applicable sub-category below (I, ii, iii, or iv).** 104(d)(4)

☐ (i) Biospecimens or information and must be publically available;

☐ (ii) Information recorded so subject cannot readily be identified, directly or indirectly/linked; investigator does not contact subjects and will not re-identify the subjects; **OR**

☐ (iii) Collection and analysis involving investigators use of identifiable health information when use is regulated by HIPAA "health care operations" or "research or "public health activities and purposes" (does not include biospecimens (only PHI and requires federal guidance on how to apply); **OR**

☐ (iv) Research information collected by or on behalf of federal government using government generated or collected information obtained for non-research activities.

4. Briefly describe the proposed research, including purpose, participant population, recruitment process, consent process, research procedures and methodology.

The theoretical framework for this study is based on Bandura's (1977) social learning theory. The purpose of this study was to describe the self-efficacy of Georgia early-career agricultural education teachers and its relationship to personal characteristics, career commitment, and job satisfaction. Specific objectives of the study are: to describe the personal characteristics of early-career agriculture teachers in the state of Georgia, describe the self-efficacy of early-career agriculture teachers in the state of Georgia for each of the three components of the agricultural education model, describe the job satisfaction and career commitment for early-career agriculture teachers in the state of Georgia, determine the relationship between personal characteristics and self-efficacy for early-career agriculture teachers in the state of Georgia and determine the relationship between self-efficacy and job satisfaction and career commitment for early-career agriculture teachers in the state of Georgia. Participants will be recruited through publicly available means using attached recruitment scripts. Names and contact information for all Georgia agricultural education teachers are publicly available for anyone's consumption on the program website. All recruitment emails will be sent by the PI. No identifying information about about participants will be collected and all information about the study will be presented in aggregate form. The consent process will include an information letter explaining all pertinent information including the purpose, procedures, risks, and benefits. The participants will be given the opportunity to ask questions of the PI and the Faculty PI. Participants will be sent a link to the instrument and they may choose whether or not to participate. Data will be collected in a manner with no direct links to an individual participant. Data will be entered into a spreadsheet and saved in a password protected file. Data files will not contain potentially identifying information. It will take participants approximately 10 minutes to participate. No deception will be used as a part of the study. No audio or video recordings will be collected. No sensitive subject matter or procedures will be used. Risks for participation in the study are minimal and no more than encountered in everyday life. There are not direct benefits for participation in the study other than awareness of the content covered in the questionnaire. Results will be presented at academic conferences, journals, popular publications, and student research outlets (dissertation, thesis). Data will be analyzed by the PI. Faculty PI will have access to and will assist the PI in analysis of the data. Standard statistical analysis for inferential and descriptive statistics will be used.

5. Describe how participants/data/specimens will be selected. If applicable, include gender, race, and ethnicity of the participant population.

Participants will include all Georgia agricultural education teachers with five years or less of experience. Participant list and contact information will be retrieved from a publicly available database.

6. **Does the research involve deception? ☐ YES ■ NO If YES, please provide the rationale for deception and describe the debriefing process.**

7. **Describe why none of the research procedures would cause a participant either physical or psychological discomfort or be perceived as discomfort above and beyond what the person would experience in daily life.**

   This survey research does not ask questions about sensitive topics nor could the information being gathered place the subject at risk of criminal or civil liability or be damaging to the subject's financial standing, employability, or reputation.

8. **Describe the provisions to maintain confidentiality of data, including collection, transmission, and storage.**

   Only the PIs will have access to data connecting responses to identifying information about participants. Data will be transmitted and stored electronically using password protected services only accessible by the PIs. No identifying information will be collected on the instrument. Data collected will be combined in a database so there will be no ability to track the origin of the data.

9. **Describe the provisions included in the research to protect the privacy interests of participants (e.g., others will not overhear conversations with potential participants, individuals will not be publicly identified or embarrassed).**

   Data will not be reported in a way that allows the individual respondent's identity to be known or tied to their responses.

10. **Will the research involve interacting (communication or direct involvement) with participants?** ☒ YES ☐ NO **If YES, describe the consent process and information to be presented to subjects. This includes identifying that the activities involve research; that participation is voluntary; describing the procedures to be performed; and the PI name and contact information.**

Participants for the study will contacted via email. All recruitment emails will be sent by the PI. Data will be collected using standard survey research methods via online instrument (attached) (Dillman, Smyth, and Christian, 2014). Participants will be distributed a copy of the instrument and information letter and asked to review the material in the "Information Letter" and only complete the instrument if they understand their "rights" and agree to participate. Participants may choose to not participate simply by not completing the instrument.

11. **Additional Information and/or attachments.**

In the space below, provide any additional information you believe may help the IRB review of the proposed research. If attachments are included, list the attachments below. Attachments may include recruitment materials, consent documents, site permissions, IRB approvals from other institutions, etc.

Waiver of documentation of consent - Will use information letter
Recruitment Letter
Email Invitation
Instrument

Principal Investigator's Signature Michael Atkinson **Date** 04/22/2019

If PI is a student,
Faculty Principal Investigator's Signature James R. Lindner **Date** 04/22/2019

Department Head's Signature [signature] **Date** 4.23.2019

APPENDIX 2 E-MAIL INVITATION FOR ONLINE SURVEY

E-MAIL INVITATION FOR ON-LINE SURVEY

Greetings Fellow Agricultural Education Teacher,

I am Michael Atkinson, a Graduate Student in the Department of Curriculum and Teaching's Agriscience Education Programs at Auburn University. We would like to invite you to participate in our research study on self-efficacy in early career agricultural education teachers. Agricultural education teachers such as you are the only source we have to collect data on this topic, and we value your opinions and perceptions on the topic.

Please review the informed consent information sheet and complete the questionnaire. Your participation will take approximately ten minutes.

INFORMATION SHEET

Your participation is voluntary. You may stop participation at any time. You will not be compensate for participating. Participation involves minimal risk and no more than encountered in everyday life. Data is being collected in a manner that there are no direct links to an individual participants and all responses will be aggregated.

I **AGREE** to participate (I have read the information sheet and agree to participate)

I **DO NOT** wish to participate

If you have any questions, please contact me or my advisor using the information below.

Thank you and we look forward to your response!

Michael Atkinson
Graduate Student
Auburn University
Mra0026@auburn.edu

James Lindner
Professor Agriscience Education
Auburn University
Jrl0039@auburn.edu
334.844.6797

(NOTE: DO NOT AGREE TO PARTICIPATE UNLESS AN IRB APPROVAL STAMP WITH CURRENT DATES HAS BEEN APPLIED TO THIS DOCUMENT.)

INFORMATION LETTER
for a Research Study entitled
Self-Efficacy of Early Career Agriculture Teachers and Its Relationship to Career Commitment and Job Satisfaction

You are invited to participate in a research study on self-efficacy in early career agriculture teachers. The study is being conducted by Professor James Lindner in the Auburn University Department of Curriculum and Teaching's Agriscience Education Program. You are invited to participate because you are an agricultural education teacher with five years or less experience and are age 19 years or older.

What will be involved if you participate? Your participation is completely voluntary. If you decide to participate in this research study, you will be asked to complete a questionnaire. Your total time commitment will be approximately ten minutes.

Are there any risks or discomforts? The risks associated with participating in this study are minimal and no more than encountered in everyday life. To minimize these risks, data will be collected anonymously and presented only in aggregate form. No direct links to your responses will be collected.

Are there any benefits to yourself or others? There are no direct benefits to your participation in this study. Benefits to others may include a better understanding of what factors affect self-efficacy and its relationship with career commitment and job satisfaction.

Will you receive compensation for participating? You will not receive any compensation for your participation.

Are there any costs? Other than your time there are no costs associated with your participation.

If you change your mind about participating, you can withdraw at any time by not returning the distributed questionnaire by closing your browser window or simply not returning it. If you choose to withdraw, your data can be withdrawn as long as it is identifiable. Once you have submitted anonymous data, it cannot be withdrawn since it will be unidentifiable. Your decision about whether or not to participate or to stop participating will not jeopardize your future relations with Auburn University, the College of Education, Curriculum and Teaching, and the

Agriscience Education program.

Any data obtained in connection with this study will remain anonymous. We will protect your privacy and the data you provide by maintaining your anonymous responses and insuring there are no connections between your responses and you. At the conclusion of this study all data collected will be destroyed after Information collected through your participation may be used presentation at academic conferences, journals, population publications, and student research outlets (dissertation, thesis).

If you have questions about this study, please contact Professor James Lindner at jrl0039@auburn.edu or 334.844.6797.

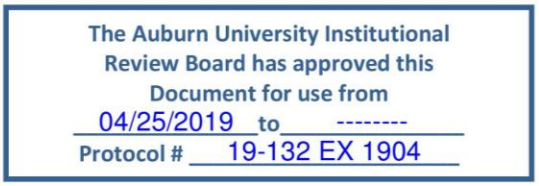
If you have questions about your rights as a research participant, you may contact the Auburn University Office of Research Compliance or the Institutional Review Board by phone (334)-844-5966 or e-mail at IRBadmin@auburn.edu or IRBChair@auburn.edu.

HAVING READ THE INFORMATION PROVIDED, YOU MUST DECIDE IF YOU WANT TO PARTICIPATE IN THIS RESEARCH PROJECT. IF YOU DECIDE TO PARTICIPATE, THE DATA YOU PROVIDE WILL SERVE AS YOUR AGREEMENT TO DO SO. THIS LETTER IS YOURS TO KEEP.

_____

Investigator's signature Date
James Lindner, Ph.D.

The Auburn University Institutional Review Board has approved this document for use from _____ to _____. Protocol #19-132, Atkinson.



AUBURN UNIVERSITY

Introduction

The purpose of this survey is to measure your self-efficacy toward various job-related skills in agricultural education as well your job satisfaction and career commitment. Your responses will assist in the training and preparation of current and future agricultural educators.

This study is being conducted by Michael Atkinson doctoral candidate, under the direction of Dr. James Linder, Professor of Agriscience Education in the Auburn University Department of Curriculum and Teaching.

This survey will take approximately 10-15 minutes to complete. There are no known risks to your participation in completing this questionnaire. Your participation is voluntary and you may answer some or none of the questions. Your results will be kept anonymous.

If you have any questions, you can contact Michael Atkinson at 478-494-9160 or at mra0026@auburn.edu.

Submitting the questionnaire represents your consent to participate in the study. Having read the information provided, you must decide if you want to participate in this survey. If you decide to participate, the data you provide will serve as your agreement to do so.

Please click the NEXT button to begin the survey. Thank you very much.

Sincerely,
Michael Atkinson
478-494-9160
mra0026@auburn.edu

The Auburn University Institutional Review Board has approved this Document for use from 04/25/2019 to -------- Protocol # 19-132 EX 1904

FFA

Section 1: Self-Efficacy in FFA

Please indicate how well you execute the following skills by marking the appropriate rating.

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
I am able to plan and conduct an FFA Chapter Officer retreat.	O	O	O	O	O
I can advise in the planning of monthly FFA chapter meetings.	O	O	O	O	O
I am able to conduct activities in recognition of National FFA Week.	O	O	O	O	O
I can advise in the selection and planning of a community service project.	O	O	O	O	O
I can assist students in conducting an FFA parent/member awards banquet.	O	O	O	O	O
I am able to assist student in completing a National Chapter application.	O	O	O	O	O
I can assist chapter officers in preparing officer books (Treasurer, Reporter, Secretary).	O	O	O	O	O
I can train students to participate in Leadership Development events (Parliamentary Procedure, Prepared Public Speaking, Extemporaneous Public Speaking, etc.)	O	O	O	O	O

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
I can train students to participate in Career Development events (Agricultural Mechanics, Forestry, Floriculture, Livestock Evaluation, etc.)	O	O	O	O	O
I can effectively plan trips to FFA leadership events such as Region Rally, Success Conference, and National FFA Convention.	O	O	O	O	O
I can conduct and keep minutes for an advisory committee meeting.	O	O	O	O	O

Classroom/Laboratory Instruction

Section 2: Self-Efficacy in Classroom/Laboratory Instruction

Please indicate how well you execute the following skills by marking the appropriate rating.

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
I can use a variety of assessment strategies.	O	O	O	O	O
I can implement alternative strategies in my classroom.	O	O	O	O	O
I am able to gauge student comprehension of what I have taught.	O	O	O	O	O
I can adjust my lessons to the proper level for individual students.	O	O	O	O	O
I am able to control disruptive behavior in the classroom.	O	O	O	O	O
I am able to establish routines to keep activities running smoothly.	O	O	O	O	O

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
I can establish a classroom management system with each group of students.	O	O	O	O	O
I am able to calm a student who is disruptive or noisy.	O	O	O	O	O
I can assist families in helping their children do well in school.	O	O	O	O	O
I am able to help students think critically.	O	O	O	O	O
I am able to foster student creativity.	O	O	O	O	O
I can motivate students who show low interest in schoolwork.	O	O	O	O	O

SAE

Section 3: Self-Efficacy in Supervised Agricultural Experience programs.

Please indicate how well you execute the following skills by marking the appropriate rating.

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
I can provide meaningful instruction about SAE programs.	O	O	O	O	O
I can motivate students to begin an SAE program.	O	O	O	O	O
I am able to make reccomendations to increase the quality of my student's SAE records.	O	O	O	O	O
I can successfully guide my students through completing an FFA proficiency application.	O	O	O	O	O

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
I am able to effectively utilize community support to develop my students' SAE programs.	O	O	O	O	O
I can conduct visits to students' homes and workplaces to evaluate SAE programs.	O	O	O	O	O

Career Commitment/Job Satisfaction

Please select the choice that best describes your feelings toward each statement.

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
Generally speaking, I am very satisfied with this job.	O	O	O	O	O
I frequently think of quitting this job.	O	O	O	O	O
I am generally satisfied with the kind of work I do in this job.	O	O	O	O	O

Please select the choice that best describes your feelings toward each statement.

	Strongly agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
Being a high school agriculture teacher has been my long-term career goal.	O	O	O	O	O	O	O
I plan to teach for at least 5 years.	O	O	O	O	O	O	O
I do not plan to be teaching next year.	O	O	O	O	O	O	O
Teaching as a career matches my personal and family needs.	O	O	O	O	O	O	O

Demographics Base/Universal

What is your year of birth?

What is the highest level of school you have completed or the highest degree you have received?

- ○ Less than high school degree
- ○ High school graduate (high school diploma or equivalent including GED)
- ○ Some college but no degree
- ○ Associate degree in college (2-year)
- ○ Bachelor's degree in college (4-year)
- ○ Master's degree
- ○ Doctoral degree
- ○ Professional degree (JD, MD)

How many years have you taught agricultural education?

What is your sex?

- ○ Male
- ○ Female

Have served or been employed in any of the following capacities? Please check all that apply.

- ☐ State FFA Officer
- ☐ National FFA Officer
- ☐ Georgia FFA/FCCLA Summer Leadership Camp staff

Were you enrolled in an agricultural education in middle or high school?

- ○ Yes
- ○ No

Were you an FFA member during middle or high school?

- ○ Yes
- ○ No

How were you certified to teach agricultural education?

- ○ Traditional
- ○ Alternative
- ○ Add-on (I was certified in another area prior to teaching agricultural education)

What is the enrollment of your agricultural education program?

- ○ 0-25
- ○ 26-50
- ○ 51-75
- ○ 76-100
- ○ 101-125
- ○ 126-150
- ○ 151-175
- ○ 176-200
- ○ >200