

The Relationship between Self-Efficacy and the Three Component Model of Agricultural  
Education

by

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## Abstract

The purpose of this quantitative descriptive study was to determine if the number of agricultural education courses, FFA participation, and level of SAE involvement served as statistically significant predictors of a student's total self-efficacy. This study also sought to determine the relationship between the three domains of self-efficacy assessed by the SEQ-C (academic, social, and emotional) and the three components of agricultural education. This study included high school students in grades 9-12 from four schools in the North District area of Alabama (N=368). Multiple regression analysis and Multivariate Analysis of Variance (MANOVA) were used to analyze the studies null hypotheses. Results from the study indicated that the three component model of agricultural education was not a statistically significant predictor of total self-efficacy for the participants in this study. Also, MANOVA indicated that the number of agricultural education courses and FFA participation were not significantly related to academic, social, and emotional self-efficacy. Finally, MANOVA indicated that SAE involvement was not significantly related to academic or emotional self-efficacy, but a follow-up univariate test indicated that a significant relationship existed with social self-efficacy.

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## Table of Contents

Abstract .....	ii
Acknowledgments .....	iii
List of Tables .....	viii
List of Illustrations .....	x
Chapter 1 .....	1
Introduction .....	1
Statement of Problem .....	3
Purpose.....	3
Research Questions.....	4
Null Hypotheses.....	5
Assumptions.....	5
Delimitations.....	6
Limitations .....	6
Significance of the Study .....	6
Operational Definitions.....	6
Chapter 2 .....	9
Introduction.....	9
Factors Influencing Self-Efficacy.....	9
Influence of Self-Efficacy on Academic Achievement .....	12

Self-Efficacy Enhancement .....	14
Social Self-Efficacy .....	15
Emotional Self-Efficacy.....	17
Description of the Three Component Model of Agricultural Education .....	19
Agricultural Education’s Influence on Academic Achievement .....	20
Agricultural Education’s Influence on Emotional and Social Self-Efficacy .....	22
Relating FFA Participation to Self-Efficacy.....	24
Relating SAE to Self-Efficacy .....	28
Theoretical Framework.....	31
Summary .....	32
Chapter 3 .....	34
Methodology.....	34
Research Questions.....	34
Null Hypotheses.....	34
Institutional Review Board .....	35
Research Design.....	36
Variables .....	36
Population .....	36
Instrumentation .....	37
Data Collection Procedure .....	40
Data Analysis .....	41
Chapter 4.....	45
Findings.....	45

Research Questions.....	45
Null Hypothesis .....	46
Description of Participants.....	46
Descriptive Statistics for the Self-Efficacy Questionnaire for Children.....	49
Research Question One.....	53
Research Question Two .....	57
Research Question Three .....	59
Research Question Four.....	63
Research Question Five .....	67
Chapter 5.....	72
Summary.....	72
Purpose.....	72
Assumptions.....	72
Research Questions.....	72
Null Hypothesis .....	73
Population .....	73
Research Design.....	74
Variables .....	74
Instrumentation .....	75
Data Collection .....	78
Data Analysis .....	78
Results.....	82
Conclusions.....	83

Implications.....	99
Recommendations.....	102
References .....	104
Appendix A .....	112
Appendix B .....	114
Appendix C.....	116
Appendix D.....	119
Appendix E .....	121
Appendix F.....	125
Appendix G.....	127
Appendix H.....	130
Appendix I .....	132
Appendix J .....	135
Appendix K.....	138
Appendix L .....	141
Appendix M .....	146

## List of Tables

Table 1- Gender Frequency of Population .....	46
Table 2- Frequency of Number of Agricultural Education Courses Taken .....	47
Table 3- Frequency of FFA Participation .....	48
Table 4- Frequency of the Number of FFA Activities Participated in by Participants .....	48
Table 5- Frequency of Participants SAE Involvement .....	49
Table 6 – Frequency of Amount of Time Spent on SAE per Semester .....	49
Table 7 – Total Self-Efficacy SEQ-C Reliability .....	50
Table 8 – Academic Self-Efficacy SEQ-C Reliability .....	50
Table 9 – Social Self-Efficacy SEQ-C Reliability.....	50
Table 10 – Emotional Self-Efficacy SEQ-C Reliability.....	50
Table 11- SEQ-C Descriptive Statistics.....	51
Table 12 – Academic, Social, and Emotional Self-Efficacy Descriptive Statistics.....	53
Table 13 – Regression Model Summary.....	54
Table 14 – Regression Analysis ANOVA .....	54
Table 15 – Regression Analysis Coefficients .....	55
Table 16 –Three Component Model and Total Self-Efficacy Correlations.....	56
Table 17 – Regression Model Collinearity Statistics.....	57
Table 18 – Partial and Semi-Partial Correlations .....	58

Table 19 – Descriptive Statistics for the Number of Agricultural Education Courses Taken and Academic, Social, and Emotional Self-Efficacy .....	61
Table 20 – MANOVA Results for Number of Agricultural Education Courses Taken and Academic, Social, and Emotional Self-Efficacy .....	62
Table 21 – Agricultural Education Courses ANOVA Results.....	63
Table 22 – FFA Participation and Academic, Social, and Emotional Self-Efficacy Statistics ..	65
Table 23 – MANOVA Results for FFA Participation and Academic, Social, and Emotional Self- Efficacy .....	66
Table 24 – FFA Participation and Academic, Social, and Emotional Self-Efficacy ANOVA Results.....	67
Table 25 – SAE Participation and Academic, Social, and Emotional Self-Efficacy Descriptive Statistics .....	69
Table 26 – MANOVA Results for SAE Participation and Academic, Social, and Emotional Self- Efficacy .....	70
Table 27 – SAE Participation and Academic, Social, and Emotional Self-Efficacy ANOVA Results.....	71
Table 28 – Levene’s Test of Equality of Error Variances .....	71

## List of Illustrations

Illustration 1 – Three Circle Model of Agricultural Education .....	112
Illustration 2 – Alabama FFA District Map .....	125

## Chapter 1

### **Introduction**

#### **Introduction and Background**

Self-efficacy is defined as the level of confidence an individual has in their ability to execute courses of action to attain specific performance outcomes (Alfassi, 2003, p.28). In academic settings, higher achievement and learning have been associated with a student's academic self-efficacy (Linnenbrink & Pintrich, 2002). In a study by Linnenbrink and Pintrich, (2002), self-efficacy was positively related to higher levels of academic achievement and persistence towards achievement. Self-efficacy can be explained by the social cognitive theory, which describes learning in terms of the interrelationship between behavior, environmental factors, and personal factors (Ormrod, 2004). Research has indicated that self-efficacy is an internal force that helps an individual manage environmental factors and how they respond to these outside forces (Jackson, 2002). Self-efficacious learners, in comparison to students who doubt their capabilities for learning, tend to work harder, be more persistent, and achieve at a higher level (Schunk, 2003).

Another domain of self-efficacy is related to how well an individual can handle social situations. Smith and Betz (2000) define social self-efficacy as "an individual's confidence in his or her ability to engage in the social interactional tasks necessary to initiate and maintain interpersonal relationships" (p. 286). Research has indicated that social self-efficacy is an integral part of an individual's success in the world (Erozkan & Deniz, 2012). A person's level of social self-efficacy is associated with their confidence in their ability to communicate in social situations, and his or her ability to control emotions as problems arise (Erozkan & Deniz, 2012).

Emotional self-efficacy, on the other hand, is related to an individual's ability to handle

their emotions. Emotional self-efficacy has been found to impact a person's level of anxiety, stress, and level of depression (Alfassi, 2003). Pool and Qualter (2013) indicated that a person's emotional self-efficacy can influence their communication ability, which can influence their ability to network and secure employment.

The development of an individual's self-efficacy may not be directly stated in any educational mission, but subsequently many curriculums address it indirectly. For example, Scott and Sarkees-Wircenski (2008) stated, "Career and Technical Education (CTE) curricula include materials that focus on the development of foundational skills, such as basic skills, thinking skills, and personal qualities, as well as a common core of workplace competencies and the specific skill competencies required for each occupational area" (p. 1). Agricultural education, which is part of career and technical education, was designed to provide students with the knowledge, skills, and personal attributes required to explore and prepare for careers in agriculture and natural resources (Scott & Sarkees-Wircenski, 2008, p. 49). In order to prepare students and develop their self-efficacy, agricultural education is delivered using a three part system. Agricultural education teachers have used a three component model to provide students with opportunities to develop leadership skills, experience personal growth, and prepare for careers (Scott & Sarkees-Wircenski, 2008). The three component model of agricultural education consists of classroom and laboratory instruction, FFA participation, and Supervised Agricultural Experience (SAE) programs (see Appendix A). Student participation in each component is meant to teach agricultural knowledge, but these components are also avenues for increasing a student's communication skills, leadership abilities, social skills, emotional control, and academic achievement (Phipps, Osborne, Dyer, & Ball, 2008). Agricultural education has not been a program that just covers agriculture; it has been a multifaceted program that promotes

academics and emotional and social development (Akers, Miller, Frazee, & Haygood, 2004).

### **Statement of the Problem**

There has been a multitude of research conducted to analyze the impact of an agricultural education teachers self-efficacy on their ability to integrate academics, manage classrooms and laboratories, use of technology, and job satisfaction level (Bunch, Robinson, & Edwards, 2012; McKim & Saucier, 2013; Stripling & Roberts, 2012; Stripling & Roberts, 2013; Swan, Wolf, & Cano, 2011), but there have been no studies conducted to analyze the impact of an agricultural education program on a student's self-efficacy. This study was designed to determine if the three component model of agricultural education impacts a student's total self-efficacy. The goal of this study was different than most others conducted on self-efficacy since the purpose was to analyze the impact of the three component model of agricultural education on a student's self-efficacy instead of the influence of a student's self-efficacy on their performance in agricultural education. Since agricultural education has changed from strictly teaching students only career skills to encompassing the development of a student's personal beliefs in their ability to grow academically, socially, and emotionally (Phipps et al., 2008), the researcher believed it was important to examine agricultural education's influence on total self-efficacy.

### **Purpose**

The purpose of this study was to investigate the influence of the three component model of agricultural education on a student's total self-efficacy. Alfassi (2003) stated, "self-efficacy is defined as personal judgments of one's capabilities to organize and execute courses of action to attain designated types of educational performances" (p. 28). Agricultural education not only serves the purpose of teaching students about the field of agriculture, it has been linked to the development of a student's academic achievement in other courses, development of a student's

social skills, and development of a student's emotional control (Phipps et al., 2008). Since agricultural education was designed to help prepare students academically, socially, and emotionally, the influence of classroom and laboratory instruction, FFA participation, and SAE involvement needed to be analyzed to assess their impact on a student's self-efficacy. Also, the study sought to see how each component of agricultural education was related with the three domains of self-efficacy in which the Self-Efficacy Questionnaire for Children (SEQ-C) measures. The SEQ-C (Muris, 2001) is a self-report instrument, developed for children ages 14-18, that contains twenty-four items that analyze three domains of self-efficacy, which are academic, social, and emotional. Each component of agricultural education was analyzed to assess their relationship with academic, social and emotional self-efficacy. The goal of this study was to help agricultural education teachers understand the impact of a complete program on a student's self-efficacy, since prior research has linked self-efficacy to academic achievement, social interactions, and emotional control (Bandura et al., 2003; Phipps et al., 2008; Smith & Betz, 2000).

### **Research Questions**

The following research questions guided the study:

1. Did the number of agricultural education courses taken, FFA participation, and SAE participation level combined predict a student's total self-efficacy?
2. What was the relative value of the number of agricultural education courses taken, FFA participation, and SAE participation in predicting a student's total self-efficacy?
3. What was the relationship between the number of agricultural education courses taken and a student's academic, social, and emotional self-efficacy?
4. What was the relationship between student involvement in FFA and a student's

- academic, social, and emotional self-efficacy?
5. What was the relationship between student involvement with SAE and a student's academic, social, and emotional self-efficacy?

### **Null Hypotheses**

1. There were no statistically significant differences in the number of agricultural education course taken, FFA participation, and level of SAE involvement to predict total self-efficacy.
2. There was no statistical significant difference in the unique value of each of the three components of agricultural education in predicting total self-efficacy.
3. There was no statistically significant difference in the relationship between the number of agricultural education courses taken and academic, social, and emotional self-efficacy.
4. There was no statistically significant difference in the relationship between student FFA participation and academic, social, and emotional self-efficacy.
5. There was no statistically significant difference in the relationship between a student's level of SAE participation and academic, social, and emotional self-efficacy.

### **Assumptions**

The following assumptions were made concerning this study:

1. Students will answer the Self-Efficacy Questionnaire for Children (SEQ-C) truthfully.
2. Students will provide accurate answers about the number of agricultural education courses they have taken, number of FFA activities they have participated in, and the amount of time they spend on their SAE.
3. The SEQ-C and agricultural education information questionnaire were the appropriate instruments for the study.

4. Sufficient data was provided by the 368 students who completed the SEQ-C and agricultural education information questionnaire.

### **Delimitations of the Study**

This study was delimited to agricultural education students in the state of Alabama. Results from this study may be generalized to agriculture students in the North District area of Alabama, and may serve as a guide for further research on a larger scale.

### **Limitations of the Study**

The following were limitations of the study:

1. The survey response rate.
2. The use of a self-reporting survey instrument. The instrument relies on truthful and accurate responses from participants.
3. The survey availability timeframe.
4. Teachers and administrators of schools in Alabama willingness to allow students to participate in the study.

### **Significance of the Study**

This study will hopefully provide teachers with some reinforcement on the benefits their students receive from their agricultural education programs. Results may provide teachers with incentive to incorporate all three components of agricultural education into their programs if they aren't currently doing so. Also, results from the study may help assess the overall productivity of agricultural education in the North District area of Alabama. Finally, the results may provide some curiosity for further studies on the topic.

## **Operational Definitions**

**Agricultural Education.** Agricultural education teaches students about agriculture, food and natural resources. Through these subjects, agricultural educators teach students a wide variety of skills, including science, math, communications, leadership, management and technology (National Association for Agricultural Education, 2013).

**Career Development Event (CDE).** demonstrate the meaningful connections between classroom instruction and real-life scenarios CDE's build on what is learned in agricultural classes and the FFA (The National FFA Organization, 2013).

**Career and Technical Education (CTE).** An educational program that provides learning experiences that help prepare students for employment, advanced education, and independent living. CTE provides opportunities to develop foundational skills such as basic skills, thinking skills, personal qualities, common core of workplace competencies, and specific skill competencies required for occupational areas (Scott & Sarkees-Wirkcenski, 2008).

**Classroom and Laboratory Instruction.** Learning activities presented to students using traditional instructional methods such as lecture, demonstration, practice, review, and assessment within the confines of a school facility (Croom, 2008).

**Emotional Self-Efficacy.** An individual's confidence in their ability to regulate or control their emotional state to function in social situations (Caprara, Giunta, Pastorelli, & Eisenberg, 2013)

**FFA.** FFA is a dynamic youth organization that is an integral part of agricultural education. The organization provides skill development opportunities in the areas of leadership, motivation, and employment (Phipps et al., 2008)

**Self-Efficacy.** The level of confidence an individual has in their ability to execute

courses of action to attain specific performance outcomes (Alfassi, 2003).

**Social Self-Efficacy.** An individual's confidence in his/her ability to engage in the social interactional tasks necessary to initiate and maintain interpersonal relationships (Smith & Betz, 2000, p. 286)

**Social Cognitive Theory.** Describes learning in terms of the interrelationship between behavior, environmental factors, and personal factors (Ormrod, 2004).

**Supervised Agricultural Experience.** Method in which students apply learned information from their agricultural education courses in an independent environment (Croom, 2008; Phipps et al., 2008).

## Chapter 2

### **Review of Related Literature**

#### **Introduction**

The review of literature was constructed to provide a link between the three component model of agricultural education, total self-efficacy, academic self-efficacy, social self-efficacy, and emotional self-efficacy. This review of literature is divided into the following sections: Introduction, factors influencing self-efficacy, influence of self-efficacy on academic achievement, self-efficacy enhancement, social self-efficacy, emotional self-efficacy, description of the three component model of agricultural education, agricultural education's influence on academic achievement, agricultural education's influence on emotional and social self-efficacy, relating FFA participation to self-efficacy, relating SAE to self-efficacy, theoretical framework, and summary.

#### **Factors Influencing Self-Efficacy**

Alfassi (2003) stated that, "academic self-efficacy is defined as personal judgments of one's capabilities to organize and execute courses of action to attain designated types of educational performances" (p. 28). Lane and Lane (2001) indicated that self-efficacy was an individual's level of confidence in their ability to perform certain tasks. An individual's confidence in their ability has been linked to the amount of intellectual development and the amount of success they will have in academics (Lane & Lane, 2001). A person's self-efficacy influences their emotional states such as stress, anxiety, and depression, which can impact one's intellectual functioning (Alfassi, 2003). Self-efficacy has been determined to be domain specific, meaning that someone may be confident in one subject but not in another (Bong & Clark, 1999). According to Paunonen and Hong (2010), "domains can refer to any activity, or

class of activities, where individuals can differ in their success rates and, more important, in their beliefs about their success rates” (p. 340). Domains influenced by one’s self-efficacy may be performance in an academic course, physical feats, or even maintaining a relationship (Paunonen & Hong, 2010). Paunonen and Hong (2010) stated the following:

Within any one domain of performance, self-efficacy beliefs can be measured with respect to diverse arrays of accomplishments differing in breadth. Consider the domain of mathematics ability. At a very narrow level, one could measure self-efficacy for doing well on a particular mathematics test. At a broader level, self-efficacy could be assessed with regard to passing a mathematics course. Even broader yet would be to evaluate beliefs about one’s general numerical aptitude (p. 340-341).

A critical factor influencing self-efficacy for learning is positive self-evaluations (Schunk, 2003). Self-evaluations allow students to monitor their progress and raise their self-efficacy by allowing them to see that they are learning and are capable of further progress. According to Schunk (2003), every student does not self-evaluate themselves, so teachers need to need to encourage and regularly have students perform self-evaluations. When students see they are making progress they will feel more confident and tend to learn better (Schunk, 2003). Since all students are not proficient in performing self-evaluations, teachers should prompt them to assess their performance and gauge their goal progress (Schunk, 2003). An example of a teacher prompting a student to self-evaluate would be by asking questions to the student related to their progress (Schunk, 2003). For example, “How much better do you think you are doing on the material now in comparison to the where you were when the lesson began?”

The differences in gender also make a difference in self-efficacy beliefs (Chaplain, 2000). Females tend to have a higher overall self-efficacy in academics (Bandura, Caprara,

Barbaranelli, Gerbino, & Pastorelli, 2003). On the other hand, males tend to be more confident in their ability to solve problems, but they are also more likely to associate luck with success instead of crediting their own abilities (Chaplain, 2000). Studies have indicated that differences in male and female self-efficacies on specific tasks may be the result of culturally acquired gender-related beliefs (Wright & Holttum, 2010). An example of gender related beliefs found to influence a difference between male and female students self-efficacy was evidenced in a study that determined that male undergraduate math majors had a higher self-efficacy than their female counterparts (Wright & Holttum, 2010). Evidence has suggested that females tend to underestimate their competence in specific areas, such as math and sciences, as a result of gender identity (Wright & Holttum, 2010). Wright and Holttum (2010) stated, “when women are exposed to an environment that reinforces the stereotype of men, they feel less confident and are less likely to participate for fear of being thought less feminine” (p. 52).

Parental academic efficacy is another factor that contributes to a student’s self-efficacy (Bandura, Barbaranelli, Caprara, and Pastorelli, 1996). According to Bandura et al. (1996), “Self-efficacious parents hold high academic aspirations for their children, and their perceived academic efficacy and educational aspirations are related to their children’s perceived academic efficacy and aspirations” (p. 1213). Typically, parents with a higher socioeconomic status hold their children to higher standards when it comes to academic performance, and they tend to exert more of an effort toward developing their children’s academic performance (Bandura et al., 1996). According to Bandura et al. (1996), “parental aspirations contribute to children’s scholastic achievement both directly and by raising their academic self-efficacy and aspirations, bolstering their self-regulatory efficacy to ward off peer pressure for detrimental pursuits, and lessening their involvement in problem behaviors that can detract from academic activities” (p.

1215).

### **Influence of Self-Efficacy on Academic Achievement**

School engagement is very important when it comes to academic achievement (Caraway, Tucker, Reinke, & Hall, 2003). The amount of student engagement at school has become a growing concern (Caraway et al., 2003). Self-efficacy is an internal variable that can hinder or facilitate a student's level of engagement (Caraway et al., 2003). Self-efficacy determines things like what task students attempt, amount of effort, persistence, and perseverance they will put toward the tasks (Caraway et al., 2003). Panunonen and Hong (2010) indicate that an individual's efficacy level on a task dictates the amount of energy they spend on accomplishing the task, how easily they are distracted from the task, how well they deal with the stress associated with the task, and how much they are affected by fatigue associated with the task. The more competent a student feels in a particular task the more effort and persistence they will put forth (Caraway et al., 2003). When students develop a strong sense of self-efficacy, the more capable they see themselves, and the better they prepare themselves educationally for their future (Bandura et al., 1996). An individual's self-efficacy belief influences their persistence and resiliency to accomplish a task, and can produce results that are better than expected (Paunonen & Hong, 2010). Individuals with similar ability levels may perform differently on tasks due to the difference in their self-efficacy (Paunonen & Hong, 2010). According to Paunonen and Hong (2010):

people low in self-efficacy, even if they are at the same skill as those high in self-efficacy, might not be as motivated to do their best, might be the first to give up on the task, might otherwise be easily sidetracked by performance-debilitating cognitions, and might consequently do worse at the task than would be predicted by their level of ability.

(p. 343)

Students with a high grade point average tend to have a higher self-efficacy and tend to be engaged in class activities more than students with a low self-efficacy (Caraway et al., 2003). In a study conducted by Caraway et al. (2003), students were scored on the Rochester Assessment Package for Schools (RAPS), and a higher self-efficacy predicted higher scores, which indicated higher levels of school engagement.

A study by Cassidy and Eachus (2000) found that students placed in programs where there was more contact with the teacher and a tutor, scored higher on tests that were administered to them in comparison to students who worked more independently. The study found that students in the group with more teacher interaction were more engaged in the class than the other students, they scored higher on the test, and they had a higher self-efficacy (Cassidy & Eachus, 2000).

Self-efficacy has been positively related to higher achievement and learning. The social cognitive career theory suggests that self-efficacy beliefs influence career interests, values, goals, and performance (Pinquart, Juang, & Silbereisen, 2002). Pinquart et al. (2002) determined that individuals with a higher perceived self-efficacy tend to work harder toward preparing themselves educationally for their future careers. According to Bandura et al. (1996), “self-efficacy beliefs shape career aspirations and pursuits during the early formative years” (p. 1206). Students with a high self-efficacy tend to consider more careers possible, show greater interests in them, prepare themselves educationally for different career pursuits, and show more persistence and success in the academic coursework (Bandura et al., 1996). Also, students who have a high self-efficacy and have higher academic achievements tend to be more satisfied with the careers they choose. Students with high confidence in their abilities tend to find jobs easier

after graduating from school and are less likely to drop out of an occupational field (Pinquart et al., 2002). Overall, the transition from school to work is often easier for students who have a high self-efficacy and excelled in their academics (Pinquart et al., 2002).

### **Self-Efficacy Enhancement**

Walker (2003) suggests that to enhance a student's self-efficacy that teachers need to give students choices, encourage strategic thinking, provide for self-evaluation, and change the assessment context. When students are allowed choices on the material they can study, they tend to spend more time and effort working on the task (Walker, 2003). Also, by giving students choices, teachers are helping them develop competence and the competence building leads to a higher self-efficacy. Another way for students to learn is by making choices through inquiry-oriented instruction (Walker, 2003). The use of real life experiences, like science activities, is an example of inquiry-oriented instruction. When students are able to use real life experiences that are new to them, allow them to ask questions and probe deeper to find answers and this increases their self-efficacy (Walker, 2003).

Students should also receive choices about topics to discuss with the class or in groups. When students are allowed to be in groups and discuss topics, they are able to convey their knowledge on a subject to their fellow classmates, and assume roles that the teacher normally would (Walker, 2003). Collaborative discussion provides a means for students to compare their progress toward learning and thus increase their self-efficacy (Walker, 2003). Allowing students to work in groups helps develop a collective self-efficacy. According to Bandura (as cited by Ormrod, 2004), "collective self-efficacy is a function not only of students' perceptions of their own and others' capabilities but also of their perceptions of how effectively they can work together and coordinate their roles and responsibilities" (p. 145).

Strategic thinking is another way that Walker (2003) suggests teachers can use to enhance a student's self-efficacy. Teachers need to teach students how to think about material they are learning, so that they understand how to obtain answers (Walker, 2003). A third way to enhance self-efficacy is by providing for self-evaluation. The use of a checklist can provide students with the criteria they need to measure how they are progressing on a task. According to Walker (2003), the use of self-evaluations is an important factor in an individual's ability to increase their self-efficacy. Another way to enhance a student self-efficacy is to change the way they are assessed. According to Walker (2003), when teachers use a traditional grading system it can result in students developing a lower self-efficacy. The use of the traditional grading system, such as A's, B's, C's, etc, becomes a student's indication of learning, which may decrease their efforts to achieve when they receive low grades. One method to help students evaluate learning that de-emphasizes traditional grades, is the use of portfolios (Walker, 2003). Portfolios allow students to share their successes and build on their strengths so that their confidence goes up (Walker, 2003). Also, the use of student-led conferences can be used to change assessment practices. This allows students to show their work to their parents and explain what they have accomplished (Walker, 2003). Also it allows students to discuss what they plan to accomplish later on in the school year (Walker, 2003). According to Walker (2003), the use of student-led conferences shifts the goal orientation for all students from performance goals to a learning goal that increases student self-efficacy.

### **Social Self-Efficacy**

Smith and Betz (2000) define social self-efficacy as “an individual's confidence in his/her ability to engage in the social interactional tasks necessary to initiate and maintain interpersonal relationships” (p. 286). According to Erozkhan and Deniz (2012), “This includes

behaviors such as negotiating interpersonal conflict, meeting new people, displaying assertiveness in social situations, cultivating romantic relationships, developing friendships, and interacting group settings” (p. 58). An individual’s ability to interact in society is a significant portion of their personal success, and individuals vary in their ability to handle social interactions (Erozkan & Deniz, 2012). Overall, a person’s perceived self-efficacy reflects their level of social confidence (Erozkan & Deniz, 2012).

A study by Erozkan and Deniz (2012) found a significant positive relationship between social self-efficacy and learned resourcefulness. Data analysis using a Pearson’s correlation arrived at a correlation value of  $r=.53$  with a significance of  $p<.01$ . Learned resourcefulness is defined as a group of acquired behaviors and skills that an individual uses to self-regulate internal responses that interfere with the execution of target behaviors (Rosenbaum & Jaffe, 1983). Rosenbaum and Ben-Ari (1985) reported that highly resourceful people were better at using cognitive control to regulate their emotions and physiological responses, applying effective problem solving strategies, staying goal oriented, and more confident in their abilities to self-regulate.

Social self-efficacy is impacted by positive and negative experiences (Bandura et al, 2003). According to Bandura et al. (2003), “Unlike the often discordant and divisive effects of negative affect, positive affect promotes social connectedness and bonding” (p. 770). Positive social experiences can enhance cognitive functioning, buffer the effects of negative experiences, and promote adaptive coping (Bandura et al., 2003). Also, supportive relationships enhance the quality of affective and behavioral functioning (Bandura et al., 2003).

In a study by Erozkan (2013), the researcher analyzed the relationship between communication skills and interpersonal problem solving skill as they relate to social self-

efficacy. The population of that study was 494 randomly selected high school students in Mulga, Turkey. Results indicated that social self-efficacy was significantly correlated with communication skills and interpersonal problem solving skills. The study also found that communication skills and interpersonal problem solving skills were important predictors of social self-efficacy (Erozkan, 2013). Multiple regression analysis determined that communication skills explained 18% of the total variance of social self-efficacy (Erozkan, 2013). Also, interpersonal problem solving skills significantly explained 22% of the total variance of social self-efficacy. According to Erozkan (2013), “When adolescents have confidence in their ability to solve problems they are more likely to view problems as challenges to be tackled than as stressors to be avoided” (p. 743). Erozkan (2013) noted, “adolescents need to have communication and interpersonal problem solving skills in order to perceive themselves as socially self-efficacious” (p. 743). According to Erozkan (2013):

Some studies can be carried out in order to help adolescents to take “Communication Skills Training” to develop communication and social skills such as sharing, cooperation, empathy, establishing positive relations with others, which are important for interpersonal problem solving, by preparing psycho-educational group work programs. It is assumed that these kinds of activities and studies help individuals, in their later periods of life, to trust themselves and their skills, and have intrapersonal/interpersonal communication skills, high life satisfaction, and be mentally healthy against the problems they encounter. (p. 743)

### **Emotional Self-Efficacy**

“People differ widely in how well they manage their emotional experiences in everyday life and the manner and degree to which they regulate their emotions likely depends, in part, on

how they appraise their affective experiences” (Caprara, Giunta, Pastorelli, & Eisenberg, 2013, p. 106). Self-efficacy beliefs are important since they reflect the control individuals believe they have over entire emotional experience (Bandura et al., 2003). The emotional experience consists of the cause of the emotion, reaction to the emotion, and the consequences of the reaction to the emotion (Bandura et al., 2003). According to Caprara et al. (2013):

Self-efficacy beliefs likely affect the regulation of emotion at both the locus of causality and the locus of their expression and consequences. Self-efficacy beliefs are believed to influence the construal of events from which emotions derive, as well as the framing of likely consequences. Furthermore, self-efficacy beliefs would be expected to influence the anticipation of, and perceived conditions for, alternative strategies to deal effectively with the causes, the expression, and the consequences of emotions. (p. 106)

Emotional experiences can influence an individual’s level of stress, anxiety, and depression, which influences intellectual functioning (Alfassi, 2003). A study by Niditch and Varela (2011) examined the influence of emotional self-efficacy on middle and high school student’s anxiety levels. The researchers used multiple regression analysis to examine the collected data. Niditch and Varela (2011) determined that emotional self-efficacy was a significant predictor of anxiety. Multiple regression analysis indicated that emotional self-efficacy explained thirty-six percent of the variance in anxiety beyond that explained by other variables entered into the analysis (Niditch and Varela, 2011).

A study by Pool and Qualter (2013), analyzed the relationship between emotional self-efficacy and employability of recent college graduates (N=306) from England, found that emotional self-efficacy was significantly related to employability. Pool and Qualter (2013) define employability as, “having certain skills and attributes that make a person more likely to

choose, secure, and retain employment, such as having good personal networks, being aware of opportunities, and feeling respected within an organization” (p. 220). The sense of having a high emotional self-efficacy translates into more confidence which tends to increase effective communications with co-workers, managers, and customers (Pool & Qualter, 2013). Individuals who have higher emotional self-efficacy tend to develop and maintain personal networks and gain the respect of others (Pool & Qualter, 2013). The study also indicated that employability was significantly correlated with career satisfaction (Pool & Qualter, 2013). The researcher indicated that emotional self-efficacy was not directly associated with career satisfaction, but it was indirectly related through employability (Pool & Qualter, 2013).

### **Description of Three Component Model of Agricultural Education**

Secondary agricultural education programs across the United States may vary, but there is a common model that serves as a guide to these programs. The primary model for organizing instruction in agricultural education involves the interrelationships between three major concepts: classroom and laboratory instruction, supervised agricultural experience (SAE), and FFA participation (Phipps et al., 2008). A study by Croom (2008) determined that there wasn't a designated date or event that established the three component model of agricultural education. Croom (2008) suggested that each component of the model originated at different times. According to Croom (2008), “the Smith-Hughes Act of 1917 provided a more sophisticated linkage between classroom instruction and SAE” (p. 110). FFA became the recognized student organization of agricultural education in 1928.

Student involvement in each component of the model creates the complete agricultural education program. The model components are interrelated with one another to help build on student learning in the agricultural education program. Teachers who utilize all three

components of the model are typically providing students with a variety of learning contexts. According to Parr and Edwards (2004), “it is widely accepted that students’ learning contexts should be coupled with multiple opportunities in which they “construct” or make meaning of their learning as it begins, progresses, and escalates” (p. 106). This approach is symbolic of the three component model of agricultural education. The three component model of agricultural education aligns well the constructivist approach to education. Croom (2008) stated “classroom and laboratory instruction are those activities that provide learning experiences within the confines of a school facility” (p. 110). Classroom and laboratory instruction includes lectures, demonstrations, practice, review, and assessment as a means to create student learning (Croom, 2008). The SAE component of the model is the method in which students apply learned information from their agricultural education courses in an independent environment (Croom, 2008). FFA is the final component of the model that Croom (2008) defined as an instructional tool that compliments both instruction and SAE. All three components provide students with a variety of learning opportunities that align with the constructivist theory to create a complete agricultural education program.

### **Agricultural Educations Influence on Academic Achievement**

Traditional agricultural education was classified as a vocational course that taught students skills and prepared them to enter the workforce directly after high school graduation. However, vocational education has since changed to career and technical education (CTE) and with this change there has been an increased desire for programs, including agricultural education, to implement a more academic curriculum (Scott & Sarkees-Wircenski, 2008). For example, the term agriscience has been defined by Buriak (as cited in Warner, Arnold, Jones & Myers, 2006) as, “Instruction in agriculture emphasizing the principles, concepts and laws of

science and their mathematical relationship supporting, describing, and explaining agriculture” (p. 126). As Theriot and Kotrlik (2009) stated, “Recently, the American educational system has undergone numerous reforms in funding, curriculum, standards, staff development, student assessment, and accountability to address the concerns of such a rapidly changing world” (p. 72). In many states CTE courses are able to be substituted for one or more required science credits in high school. For example, the Louisiana Department of Education allows students who complete Agriscience I and Agriscience II to substitute these credits for one of the required science credits mandated in the state graduation requirements (Theriot & Kotrlik, 2009).

Standardized tests have become the standard to measure school and student performance (Theriot & Kotrlik, 2009). Standardized test scores are used to assess the achievement of students in academic areas such as: mathematics, science, reading, social studies, etc. Chiasson and Burnett (2001) concluded that agriscience education students scored higher than non-agriculture students on the science portion of their states graduation exam.

Theriot and Kotrlik (2009) compared the scores of 11<sup>th</sup> grade agricultural education students and non-agricultural education students on the Louisiana Graduate Exit Exam (GEE) using standard descriptive statistics and inferential *t*-tests. Theriot and Kotrlik (2009) used Cohen *d* to determine effect size. The results indicated that there was not a statistically significant difference between agricultural education and non-agricultural education students on total science scores, meaning that agricultural education students were at least equal to the non-agricultural education students (Theriot & Kotrlik, 2009). Theriot and Kotrlik (2009) used Forward multiple regression analysis, Pearson product-moment correlations coefficients, R<sup>2</sup> change, Variance Inflation Factor (VIF), Multicollinearity, and ANOVA to explain the variance in science graduation exam exit scores. Data analysis indicated that enrollment in an agricultural

education course was a significant explanatory variable of total science scores and scores of the five science domains measured on the GEE (Theriot & Kotrlik, 2009). Theriot and Kotrlik (2009) indicated that the effect size was negligible and that this indicated that there was no practical effect on science scores from being enrolled in an agricultural education course.

Ricketts, Duncan, and Peake (2006) conducted a study to analyze the science achievement of Georgia students in complete agricultural education programs consisting of classroom and laboratory instruction, FFA, and SAE. Also, the study compared the science achievement of agricultural education students to students enrolled in college preparatory, dual track, and career preparedness programs (Ricketts, Duncan, Peake, 2006). The researchers used the science section of the Georgia High School Graduation Test (GHS GT), number of agricultural education courses passed, and teacher rankings of student involvement in FFA and SAE programs as the instrument. Data analysis consisted of the descriptive statistics mean and standard deviation. Inferential statistics were used to compare the student's scores. According to Ricketts, Duncan, and Peake (2006), "students achieved higher science scores due to participating in an agriscience course(s) or activity, in comparison with those who did not participate" (p.53). Also, the study determined that 78% of agricultural education students passed the GHS GT on their first attempt compared to the state average of 68% (Ricketts, Duncan, & Peake, 2006). Finally, the study provided evidence that taking agricultural education courses and the level of involvement in FFA and SAE is related to a student's scientific knowledge and application of scientific concepts (Ricketts, Duncan, & Peake, 2006).

### **Agricultural Educations Influence on Emotional and Social Self-Efficacy**

School systems realize the need to prepare students to be well rounded individuals that are ready to meet the challenges of the world. Many people in the educational system focus

primarily on the academic achievement of students. Educators are now seeing the importance of attending to a student's social and emotional learning (Akers, Miller, Frazee, & Haygood, 2004). As Akers et al. (2004) states, "The challenge of raising knowledgeable, responsible, and caring individuals is recognized by nearly everyone" (p. 86). Akers et al. (2004) noted:

Today, educators have renewed their perspectives on what common sense has always suggested: when schools attend systematically to students' social and emotional skills, the academic achievements of students increase, the incidents of problem behaviors decrease, and the quality of relationships surrounding each student improves. (p. 86)

It has been stated that emotional intelligence predicts as much as 80% of a person's success in life, while IQ predicts 20% (Goleman, 1995).

Agricultural education consists of three components, as noted earlier, and it is not a new concept of incorporating emotional intelligence into the agricultural curriculum through these components (Akers et al., 2004). According to Phipps and Osborne (1988), "practical application and successful transfer of knowledge, skills, and attitudes into real-world settings is the goal of instruction" (p. 19). This philosophy of agricultural education aligns itself with the development of emotional and social self-efficacy (Akers et al., 2004). It has been noted that success in the world is dependent upon academic ability and social and emotional skills (Akers et al., 2004; Goleman, 1995). Agricultural education is not a program that just covers agriculture; it is a multifaceted program that promotes academics and emotional and social development (Akers et al., 2004).

Akers et al. (2004) surveyed teachers in Oklahoma, Texas, and New Mexico to determine the critical needs of emotional intelligence in agricultural education classrooms as perceived by agricultural instructors. The results of the study indicated that many of the teachers were

implementing eight of the high-level needs associated with emotional intelligence into their curriculum. The eight high level needs being implemented are as follows: ability to cooperate, capacity to communicate, citizenship, confidence, life skills, self-control, self-motivation, and workplace skills (Akers et al., 2004). Each of these concepts taught align with the philosophy of agricultural education and contribute to an individual's academic, emotional and social self-efficacy.

### **Relating FFA Participation to Self-Efficacy**

The National FFA Organization strives to make a positive difference in the lives of students by developing their potential for premier leadership, personal growth and career success through agricultural education (FFA Mission, 2013). The FFA Organization utilizes the following to accomplish its mission:

- Develops competent and assertive agricultural leadership.
- Increases awareness of the global and technological importance of agriculture and its contributions to our well-being.
- Strengthens the confidence of agriculture students in themselves and their work.
- Promotes the intelligent choice and establishment of an agricultural career.
- Encourages achievement in supervised agricultural experience programs (SAE).
- Encourages wise management of economic, environmental and human resources of the community.
- Develops interpersonal skills in teamwork, communications, human relations and social interaction.
- Builds character and promotes citizenship, volunteerism and patriotism.
- Promotes cooperation and cooperative attitudes among all people.

- Promotes healthy lifestyles.
- Encourages excellence in scholarship. (2012- 2013 *Official Manual*, p. 6):

The FFA mission aligns well with variables that impact an individual's academic, social and emotional self-efficacy. The organization poses several questions, many which relate to developing an individual's self-efficacy, about its mission of helping students develop premier leadership, personal growth, and career success (See Appendix M).

Townsend and Carter (1983) examined the relationship between FFA participation and perceived leadership, citizenship, and cooperation. The study utilized an ex post facto correlational design consisting of 426 participants. Data was collected using the Personal Development Inventory (PDI) and the FFA Activity Participation Inventory. Results from the study determined that there wasn't any significant correlations between the three competencies and participation score (Townsend & Carter, 1983). Using *t*-test, Townsend and Carter (1983) determined there was a significant difference on PDI scores for FFA participants compared to non-participants (Townsend & Carter, 1983).

Carter and Neason (1984) examined the relationship between students' participation in FFA activities and their self-perceived personal development. This was a replicated study that utilized an ex post facto correlational design. The population consisted of 428 seniors from 53 schools. The PDI and FFA Activity Participation Inventory were used to collect data. Data analysis consisted of descriptive statistics, Pearson correlations, and *t*-tests. Results from the study indicated that positive relationships were found between FFA participation and personal development scores (Carter & Neason, 1984). The leadership scale was determined to have the strongest correlation coefficient (.35) which indicated a moderate relationship with FFA participation scores (Carter & Neason, 1984). The researchers divided participants into groups

based on high, moderate, and low levels of FFA participation. The group labeled high participation level was compared to the low participation level using *t*-tests. Results from the *t*-test indicated that the high level participation group had significantly higher PDI scores on four of the seven scales (leadership, orientation to agricultural occupations, citizenship, and cooperation) and the total PDI (Carter & Neason, 1984).

Scanlon and Burket (1986) conducted a study to determine the relationship between level of FFA participation and interpersonal skill development, the relationship between level of FFA advisor participation and interpersonal skill development, and the relationship between the level of chapter activities and interpersonal skill development. The population consisted of 21 agricultural programs across the state of Pennsylvania. Data were collected using the California Psychological Inventory (CPI), the FFA Activity Participation Inventory, Chapter Index and the Advisor Index questionnaire. The CPI was administered as both a pretest and posttest. Factorial analysis of covariance, *t*-tests, and descriptive statistics were used to analyze the data.

Significant results from the study indicated that students in an agricultural education program that were considered to have a moderate level (13-25 activities) of chapter activities had significantly higher scores on the CPI for the interpersonal skill of responsibility (Scanlon & Burket, 1986). Also, students who had advisors who were moderately to highly involved in planning FFA activities showed a significant relationship between the score for “self-acceptance” and “responsibility” (Scanlon & Burket, 1986). These interpersonal skills FFA helps develop are related to individual’s emotional and social self-efficacy.

FFA also impacts a member’s academic successes. FFA provides students with opportunities to apply classroom knowledge to real world situations (Phipps et al., 2008). These situations are presented to members in the form of Career Development Events (CDE’s). There

are a variety of CDE's, and some examples are as follows: Forestry, Land, Livestock Judging, Meats Evaluation, Prepared Public Speaking, Extemporaneous Speaking, Poultry, and more. Each of these CDE's requires students to apply learned knowledge and skills in a competitive format. Even though it is a competition, it is an opportunity for FFA members to show off the knowledge they have gained. According to Connors and Mundt (2001):

Career development events are an excellent bridge between what the students learn in the classroom or laboratory, the skills they have learned as part of the SAE program, and the competition and recognition available through the FFA. This bridge builds the transition into career success. (p. 7)

Gerber, Marek, and Cavallo (as cited by Ramsey and Edwards, 2004) state the following:

Many of the CDEs involve team activities that are cooperative learning exercises in which students work collaboratively to interpret and resolve problem-based scenarios, thus addressing science educators' calls for informal learning opportunities in science that "stimulate cognitive conflict and promote social interaction" (p. 92)

A study by Croom, Moore, and Armbruster (2009), surveyed 2145 FFA members at the 2003 National FFA Convention in Louisville, Kentucky. Findings from the study revealed that FFA members believed that participation in a national CDE evaluated their knowledge and ability of the event (Croom et al., 2009). Also, FFA members agreed that participation in the event better prepared them for future employment opportunities (Croom et al., 2009). The study also determined that scholarships were the most important recognition students received (Croom et al., 2009). Wells and Parr (2012) determined that Alabama FFA students participating in the Agricultural Mechanics CDE were being taught a significant number of math standards. The math required in the Alabama Agricultural Mechanics CDE aligned well with the standards of

the mathematics curriculum in the state (Wells & Parr, 2012).

Another study by Croom and Flowers (2001) provided insight into the perception of FFA members towards the FFA organization. The study included 404 students enrolled in the Agriscience Applications course in 27 North Carolina schools. Data were collected through a questionnaire, and the data analysis consisted of descriptive statistics, Pearson Product Moment Correlations and multivariate analysis. This study determined that most FFA members believed that FFA programs taught necessary leadership skills (M=3.18) (Croom & Flowers, 2001). Also, FFA members agreed that FFA is effective in teaching communication skills (M=3.15) (Croom & Flowers, 2001). Another significant finding from the study indicated that FFA members agreed that FFA helped people with meeting their educational goals (M=3.17) (Croom & Flowers, 2001). The study indicated a statistically significant difference in the mean scores of FFA members and non-members.

### **Relating SAE to Self-Efficacy**

Talbert, Vaughn, Croom, and Lee (as cited in Retallick, 2010) define Supervised Agricultural Experience (SAE) as “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” (p. 59). SAE is considered an integral, intracurricular portion of agricultural education. According to Talbert et al. (as cited in Retallick, 2010), student participation in SAE provides several benefits to them, including the following:

Development of decision-making skills, including career and personal choices, improves self-confidence and human relation skills, application of knowledge learned in the classroom, knowledge of a variety of occupations and careers, development of time management and record-keeping skills, document of experience needed on job

applications, discovery of areas of personal interest, practice of responsibility and development of independence, and development of pride through personal accomplishment. (p.60)

Students who actively operate an SAE are able to apply the information that they have learned in the classroom and laboratory to a real world setting. According to Croom (2008), “SAE experience helps students put into practice the principles learned in the agriculture classroom” (p. 110).

Agricultural education students are able to conduct four different types of SAE’s, and they are as follows: entrepreneurship, placement, agriscience research and experimentation, and exploratory. Entrepreneurship SAE’s are designed for a student owning and operating an enterprise that is agriculture related. Placement SAE’s consist of a student working or volunteering for someone/or business that is agriculture related. The agriscience research and experimentation SAE involves students planning and conducting agriculture research using the scientific method. The final SAE type, exploratory, allows students to explore the field of agriculture in a variety of ways. Each SAE type is designed to enhance a student’s knowledge and allow them to apply their knowledge in the field of agriculture.

A qualitative study by Robinson and Haynes (2011) was conducted to investigate the value and expectations of student participation in SAE. The study was conducted through face to face interviews of alternatively certified agriculture education teachers in Oklahoma.

Participants in the study emphasized the importance of student participation in SAE. A participant stated the following:

I think SAE involvement is very important. It teaches them life skills. It teaches them responsibility. It teaches them everything! Whenever they get out in the real world, they

are going to be much farther ahead of those kids who did not do a SAE program.

(Robinson & Haynes, 2011, p. 51).

Teachers interviewed in the study believed that participation in SAE helped students develop critical thinking skills which enhanced classroom instruction (Robinson & Haynes, 2011). Also, teachers believed that participating in SAE helped students develop social skills through working with people in the agriculture industry. Students develop socially by learning to interact with people in the industry while developing networks (Robinson & Haynes, 2011). A teacher believed that by working with businesses, as part of a student SAE, the relationships developed will help the student whenever it's time for full time employment (Robinson & Haynes, 2011). Also, one teacher mentioned that students are more effective in encouraging other students to participate in SAE, and that many students are helped vicariously by other students discussing their SAE (Robinson & Haynes, 2011).

Cheek, Arrington, Carter, and Randell (1994) examined the relationship between SAE and student achievement. Data was obtained from 537 agricultural education students in the state of Florida. The researchers used a student questionnaire, teacher questionnaire, and a final examination to collect data. Statistical analysis consisted of using Pearson product moment correlation coefficients, stepwise multiple regression, and descriptive statistics. The major finding of the study revealed that SAE had a positive significant correlation (.33) with student achievement (Cheek et al., 1994). Even though SAE was significantly correlated with student achievement, it didn't explain a significant portion of the variance in student achievement in the stepwise multiple regression (Cheek et al., 1994).

## **Theoretical Framework**

The theoretical framework of this study lies in the social cognitive theory. According to Ormrod (2004), “the social cognitive theory, initially known as the social learning theory, evolved from behaviorism, but now includes many of the ideas that cognitivists also hold, hence the gradual shift in label to social cognitive theory” (p. 124). This particular theory focuses on what and how people learn from one another, encompassing such concepts as observational learning, imitation, and modeling (Ormrod, 2004, p.124). There are several general principles underlying the social cognitive theory, which are as follows: People can learn by observing the behaviors of others, as well as by observing the outcomes of those behaviors, learning can occur without a change in behavior, the consequences of behavior play a role in learning, and cognition plays a role in learning (Ormrod, 2004, p. 125). The role of self-efficacy generally lies in the principle dealing with cognition, but all the principles may affect ones self-efficacy (Ormrod, 2004). The area of cognition, as pertaining to the social cognitive theory involves individuals learning without performance (vicarious acquisition), expectations, consequence contingencies, and cognitive processing during learning (Ormrod, 2004).

The social cognitive theories evolution from behaviorism is seen by the effects self-efficacy has on behavior. Self-efficacy affects the behavior of individuals by their choice of activities, their goals, their effort and persistence, and their learning and achievement (Ormrod, 2004). The social cognitive theory outlines several factors in the development of an individual’s self-efficacy (Ormrod, 2004). The social cognitive theory states that previous successes and failures, messages from others, successes and failures of others, and successes and failures of the group as a whole are factors in the development of an individual’s self-efficacy (Ormrod, 2004). According to Ormrod (2004), “students usually hold fairly accurate opinions about their own

self-efficacy” (p. 143). Students generally feel more confident that they can succeed at a task when they have succeeded at that task or at similar ones in the past (Ormrod, 2004, p. 144). Also, students self-efficacy beliefs are enhanced when they receive praise from others for good performance or others provide assurance that success is possible, thus referring to the power of messages from others (Ormrod, 2004). A student may also acquire information about their own self-efficacy by observing others succeed or fail at tasks (Ormrod, 2004). Students may develop a stronger self-efficacy when they work in a group, rather than when they work alone and especially when they have success as a group (Ormrod, 2004). It should be noted, even though group success may enhance an individual’s self-efficacy, social cognitive theorists believe that people can and should ultimately regulate their own behavior (Ormrod, 2004).

The social cognitive theory provides a great base for understanding the importance of self-efficacy as it relates to the components of agricultural education. It provides principles that underlie the development of one’s self-efficacy, and the premise for shaping a desired self-efficacy for students. This theoretical framework provides meaning and substance that can help educators assist their students in developing a positive attitude that may lead to their success.

## **Summary**

The review of related literature was developed to provide insight into the following topics: factors influencing self-efficacy, influence of self-efficacy on academic achievement, self-efficacy enhancement, social self-efficacy, emotional self-efficacy, description of the three component model of agricultural education, agricultural educations influence on academic achievement, agricultural educations influence on emotional and social self-efficacy, relating FFA participation to self-efficacy, and relating SAE to self-efficacy. The literature provides a link between self-efficacy and the three components of agricultural education. Self-efficacy has

been determined to be an important factor in personal success, and agricultural education provides students with a variety of contexts to improve their self-efficacy. In an essence, agricultural education's design is conducive to enhancing a student's ability to meet the challenges of society by improving their internal beliefs on their ability to handle a variety of situations.

## Chapter 3

### **Methodology**

This chapter contains information pertaining to the methodology used to conduct the quantitative study. The methodology will provide the structure for the assessment used to determine the relationship between self-efficacy and the three component model of agricultural education. The methodology is divided into the following sections: research questions, null hypotheses, Institutional Review Board, research design, population, instrumentation, data collection procedures, and data analysis procedures.

#### **Research Questions**

1. Did the number of agricultural education courses taken, FFA participation, and SAE participation level combined predict a student's total self-efficacy?
2. What was the relative value of the number of agricultural education courses taken, FFA participation, and SAE participation in predicting a student's total self-efficacy?
3. What was the relationship between the number of agricultural education courses taken and a student's academic, social, and emotional self-efficacy?
4. What was the relationship between student involvement in FFA and a student's academic, social, and emotional self-efficacy?
5. What was the relationship between student involvement with SAE and a student's academic, social, and emotional self-efficacy?

#### **Null Hypotheses**

1. There was no statistically significant differences in the number of agricultural education course taken, FFA participation, and level of SAE involvement to predict total self-efficacy.

2. There was no statistical significant difference in the unique value of each of the three components of agricultural education in predicting total self-efficacy.
3. There was no statistically significant difference in the relationship between the number of agricultural education courses taken and academic, social, and emotional self-efficacy.
4. There was no statistically significant difference in the relationship between student FFA participation and academic, social, and emotional self-efficacy.
5. There was no statistically significant difference in the relationship between a student's level of SAE participation and academic, social, and emotional self-efficacy.

### **Institutional Review Board**

Federal regulations require Auburn University's research compliance board to review and approve all research that involves human subjects. The researcher submitted a complete Institutional Review Board (IRB) application that was submitted to Auburn University's Office of University Research and IRB. IRB determined the study would not create any harm for the human subject participating in the study and approved the study (See Appendix B). IRB mandated that any school system that had subjects participating in the study must submit a signed letter from an administrator on school letterhead to the researcher indicating they understand how consent and data were to be collected.

Auburn University's IRB required that an information letter (See Appendix C) be sent to the target population. The information letter, consent forms (See Appendices C & E), assent forms (See Appendix D), and other necessary documents were sent to the target population via email. The email contained the necessary forms and information, as well as, a link to the

questionnaire on Qualtrics.com®.

## **Research Design**

To complete the study, a quantitative research design was used. The researcher utilized multiple regression and Multivariate Analysis of Variance (MANOVA) to analyze data and draw conclusions. According Ross and Shannon (2011), “Multiple regression is an extension of simple regression in that, instead of using one predictor or independent variable, multiple predictor or independent variables are used” (p. 154). According Mertler and Vannatta (2010), “MANOVA is designed to test the significance of group differences” (p. 117). MANOVA allows the analysis of group differences using multiple dependent variables while maintaining an overall error rate of .05 (Mertler & Vannatta, 2010). In this study, self-efficacy and the three components of agricultural education were examined for a relationship. Participants in the study were administered the Self-Efficacy Questionnaire for Children (SEQ-C) and a brief questionnaire to gather information about their level of participation in agricultural education (number of courses taken, FFA participation, and amount of time spent on SAE). Descriptive statistics (frequencies, means, and standard deviations) were used to describe the population, independent variables and the dependent variable.

## **Variables**

The variables in this study were the participant’s self-efficacy, number of agricultural education courses taken, FFA participation, and amount of time spent on SAE. Self-efficacy is the dependent variable, and the three components of the agricultural education model are the independent variables. Total self-efficacy scores were derived from the addition of a student’s determined academic, social, and emotional self-efficacy. Academic, social, and emotional self-efficacy was variables analyzed through MANOVA with each of the three components of the

agricultural education model.

## **Population**

The population of this study consisted of agricultural education students from four high schools in the North District of Alabama that ranged in age from 14-18. Alabama is divided into three districts as it relates to FFA: North, Central, and South (See Appendix F). Every high school that has an agricultural education program was contacted for participation in the study. Of the 282 FFA chapters, only four opted to participate in the study. Each chapter that participated in the study was asked to administer the SEQ-C and the general information questionnaire. The general information questionnaire was developed to gather information about the participant's gender and level of participation in each of the three components of agricultural education. A total of 427 surveys were submitted, but 368 were entirely completed and useable. Surveys that were completely answered were considered in this study.

## **Instrumentation**

The first instrument used to collect data was the *Self-Efficacy Questionnaire for Children* (SEQ-C; Muris, 2001; See Appendix G). The SEQ-C, according to Muris (2001) is a self-report instrument that contains twenty-four items that analyze three domains of self-efficacy, which are: academic, social, and emotional. Each domain is measured through eight questions that are scored on a 5 point Likert scale with 1 being "Not at all" and 5 being "Very well". It was understood that 2, 3, and 4 on the scale were different levels of measurement but there were no stated descriptors for the values since the instrument wasn't modified from its original version. A total self-efficacy score is generated by tallying the scores across all three domains. According to Muris (as cited in Moree, 2010), "The scale has been shown to demonstrate good construct validity via strong correlations with Muris, Schmidt, Lambrichs and Meesters' (2001) Negative

Attributions Questionnaire and Bijstra, Jackson, and Bosma's (1994) Coping List measure" (p. 25). Also, in a study by Suldo and Huebner (as cited in Moree, 2010), the SEQ-C was found to have an internal consistency reliability of .82 for the academic subscale, .78 for the emotional subscale, and .76 for the social subscale. In a study by Muris (2001) the SEQ-C was found to have an internal consistency reliability that was satisfactory. Muris (2001) determined that Cronbach's  $\alpha$  were .88 for total self-efficacy scores and between .85 and .88 for the subscale scores.

A general questionnaire developed by the researcher was used to gather data about the participant's participation in agricultural education (See appendix H). The general questionnaire had participants indicate their gender, number of agricultural education courses they had taken, the number FFA activities they had participated in, and the amount of time they spent on their SAE per semester. Students were to select one response for each question on the instrument. The number of agricultural education courses ranged from a selection of 1 to 5 possible courses taken. The possible responses for FFA participation ranged from 1, meaning 0 FFA activities participated in, to 5, meaning 4 or more FFA activities participated in. For statistical analysis, FFA participation was utilized as a dichotomous variable and entered as either a student participated in FFA or they didn't. FFA participation was utilized as a dichotomous variable since the data collected could not be considered continuous, and by producing two groups, the assumptions of multiple regression were maintained. The reason data were collected, number of FFA activities actually participated in, was to provide a better description of the participants instead of just describing them as participants or non-participants. The amount of time spent working on their SAE per semester was divided into ranges where 1 indicated 0-10 hours spent on SAE and a 5 indicated 40 or more hours spent working on an SAE. Responses for SAE

involvement were divided into spending “less than 10 hours” or spending “more than 10 hours” per semester working on SAE. Spending less than ten hours per semester on SAE was considered low participation for this study. SAE participation was utilized as a dichotomous variable for statistical purposes since the data collected could not be considered continuous, and by producing two groups, the assumptions of multiple regression were maintained. The reason data were collected as ranges of hours spent on SAE each semester was to provide a more accurate description of the participant’s level of SAE participation.

In order to enlist participants in the study, the researcher made initial contact with agriculture teachers from Alabama at district and state FFA events during the Spring 2013. The informal discussions with the teachers were utilized to inform them about the upcoming study. Once IRB approval had been granted, an informational email was sent to each agricultural education teacher, in Alabama, explaining the importance of the study and soliciting the teachers help with securing their students participation in the study (See Appendices I, J, & K). Follow up emails, two total, were sent at 10 day intervals. According to Dillman (2000), “a well done survey was likely to exhibit a series of four carefully timed contacts” (p.1). In order for students to participate in the study, IRB mandated that schools participating in the study must submit an approval letter on official school letterhead and signed by an administrator. The letter must have included the schools consent to let their students participate in the study, and that they understood how students would consent, and how data would be collected (See Appendix L). Once a school submitted an approval letter, each student participant was asked to submit the minor assent form if they were willing to participate, and no parental consent form was needed if their parents didn’t mind them participating. Once minor assent forms and non-participant parental consent forms were collected, the questionnaires were delivered to participants through

an electronic survey mode using Qualtrics. An electronic survey mode was utilized since teachers had access to computer labs that their students could use to complete the survey. Also, the electronic survey was utilized in an effort to increase the response rate.

Confidentiality of the participants' and their responses were maintained due to the data being collected anonymously. Identifiable data were not collected from participants, so linking individuals to surveys were impossible. All responses were collected and maintained by Qualtrics.com® on a secure database.

### **Data Collection Procedure**

Once approval for the study was given by Auburn University's Institutional Review Board (See Appendix B), the researcher began the process of data collection. Before any student could receive information about the study, permission had to be granted from the school. A letter signed by an administrator, indicating that they understood the process of the study, had to be on file before possible participants could receive information about the study. This information was contained in the email sent to each agricultural education teacher, and in each of the two follow-up emails sent seeking their help. Once school permission had been granted, the agricultural education teacher at the school printed each student an information letter, consent forms for parental permission, and assent forms (See Appendices C, D, & E). The consent forms that requested parental permission for their child to participate in the study only had to be returned to the researcher if they didn't want their child to participate. Each participant had to sign an assent form, since many of the participants are under the age of 18. The assent forms were mailed to the researcher, and filed in a locked filing cabinet. Once all forms had been submitted, the participants completed the online questionnaire through Qualtrics.com®. The survey was available for five weeks.

## **Data Analysis**

Quantitative data gathered from the questionnaires were analyzed using the Statistical Package for Social Sciences (SPSS). Analysis consisted of descriptive statistics which allowed the researcher to analyze means, medians, frequencies and standard deviations. Multiple regression analysis was used to determine the explained variance of the dependent variable (total self-efficacy) by the independent variables (number of agricultural education courses completed, FFA participation, and SAE involvement per semester). Also, multiple regression was used to determine if a predictive equations could be determined using the independent variables to predict the dependent variable. MANOVA was utilized to analyze any group mean differences that may exist between each component of the agricultural education model (number of courses taken, FFA participation, SAE involvement) and three domains of self-efficacy (academic, social, emotional).

Research Question 1, “Did the number of agricultural education courses taken, FFA participation, and SAE participation level combined predict a student’s total self-efficacy?” Data collected were analyzed using multiple regression analysis. Each participant’s general self-efficacy score was tabulated by summing their scores from all three domains (academic, social, and emotional) of self-efficacy measured on the SEQ-C, and was entered as the dependent variable in regression analysis. Participant responses to the questions pertaining to number of agricultural education classes completed, FFA participation, and the amount of time spent on SAE per semester were entered as independent variables in the regression analysis. The enter method was utilized for multiple regression analysis since it includes all independent variables and doesn’t have the ability to remove variables. This was important since research question one wanted to determine if all three components of the agricultural education model could be used to

predict a student's total self-efficacy.

Research Question 2, "What was the relative value of classroom and laboratory instruction, FFA participation, and SAE participation in predicting a student's total self-efficacy?" Data collected were analyzed using multiple regression. For this particular research question, hierarchical multiple regression analysis was used. Each participant's general self-efficacy score was tabulated by summing their scores from all three domains (academic, social, and emotional) of self-efficacy measured on the SEQ-C, and was entered as the dependent variable in regression analysis. Participants' responses to the questions pertaining to number of agricultural education classes completed, FFA participation, and the amount of time spent on SAE per semester were entered as independent variables in the regression analysis. In the case that no significant explanation of variance was determined by multiple regression utilizing the enter method, each independent variable would be analyzed by partial and semi-partial correlations. The examination of partial and semi-partial correlations provides information on the variance of the dependent variable explained by the independent variables.

Research Question 3, "What was the relationship between the number of agricultural education courses taken and a student's academic, social, and emotional self-efficacy?" Data collected were analyzed using multivariate analysis of variance (MANOVA) in SPSS. MANOVA was used since it allows the analysis of the effect an independent variable (number of agricultural education courses taken) has on multiple dependent variables (academic, social, and emotional self-efficacy). Data analyzed through MANOVA were examined for relationships through the results of four separate multivariate tests, which are as follows: Pillar's Trace, Wilks' Lambda, Hotelling's Trace, and Roy's Largest Root. Each multivariate test produces an F-value that was determined to be significant based on its associated p-value. Results of each

multivariate test indicated whether the independent variable has an effect on the dependent variables as a group. Output from MANOVA produces individual analysis of variance (ANOVA) tests that examined the significance of each dependent variable to the independent variable. Results of the ANOVA's were examined for significance by analyzing the F-value and its associated p-value. For this study, a priori alpha value of .05 was established to determine significance.

Research Question 4, "What was the relationship between student involvement in FFA and a student's academic, social, and emotional self-efficacy?" Data collected were analyzed using multivariate analysis of variance (MANOVA) in SPSS. MANOVA was used since it allows the analysis of the effect an independent variable (FFA participation) has on multiple dependent variables (academic, social, and emotional self-efficacy). Data analyzed through MANOVA are examined for relationships through the results of four separate multivariate tests, which are as follows: Pillar's Trace, Wilks' Lambda, Hotelling's Trace, and Roy's Largest Root. Each multivariate test produces an F-value that was determined to be significant based on its associated p-value. Results of each multivariate test indicated whether the independent variable has an effect on the dependent variables as a group. Output from MANOVA produces individual analysis of variance (ANOVA) tests that examined the significance of each dependent variable to the independent variable. Results of the ANOVA's were examined for significance by analyzing the F-value and its associated p-value. For the study, a priori alpha value of .05 was established to determine significance.

Research Question 5, "What was the relationship between student involvement with SAE and a student's academic, social, and emotional self-efficacy?" Data collected were analyzed using multivariate analysis of variance (MANOVA) in SPSS. MANOVA was used since it

allows the analysis of the effect an independent variable (Level of SAE participation) has on multiple dependent variables (academic, social, and emotional self-efficacy). Data analyzed through MANOVA are examined for relationships through the results of four separate multivariate tests, which are as follows: Pillar's Trace, Wilks' Lambda, Hotelling's Trace, and Roy's Largest Root. Each multivariate test produces an F-value that was determined to be significant based on its associated p-value. Results of each multivariate test indicated whether the independent variable has an effect on the dependent variables as a group. Output from MANOVA produces individual analysis of variance (ANOVA) tests that examined the significance of each dependent variable to the independent variable. Results of the ANOVA's were examined for significance by analyzing the F-value and its associated p-value. For the study, a priori alpha value of .05 was established to determine significance.

## Chapter 4

### Findings

The purpose of this quantitative descriptive study was to determine the relationship between self-efficacy and the three component model of agricultural education. Multiple regression analysis was utilized to determine the amount of a student's self-efficacy variance could be explained by the number of agricultural education courses taken, FFA participation, and level of SAE involvement. Also, a Pearson product moment correlation was calculated to analyze the relationship between each of the independent variables (agricultural education courses completed, FFA participation, SAE involvement) and each domain of self-efficacy measured on the SEQ-C (academic, social, emotional). Descriptive statistics were utilized to describe the participant population and responses on the SEQ-C and general questionnaire.

### Research Questions

1. Did the number of agricultural education courses taken, FFA participation, and SAE participation level combined predict a student's total self-efficacy?
2. What was the relative value of the number of agricultural education courses taken, FFA participation, and SAE participation in predicting a student's total self-efficacy?
3. What was the relationship between the number of agricultural education courses taken and a student's academic, social, and emotional self-efficacy?
4. What was the relationship between student involvement in FFA and a student's academic, social, and emotional self-efficacy?
5. What was the relationship between student involvement with SAE and a student's academic, social, and emotional self-efficacy?

## Null Hypotheses

1. There was no statistically significant differences in the number of agricultural education course taken, FFA participation, and level of SAE involvement to predict total self-efficacy.
2. There was no statistical significant difference in the unique value of each of the three components of agricultural education in predicting total self-efficacy.
3. There was no statistically significant difference in the relationship between the number of agricultural education courses taken and academic, social, and emotional self-efficacy.
4. There was no statistically significant difference in the relationship between student FFA participation and academic, social, and emotional self-efficacy.
5. There was no statistically significant difference in the relationship between a student's level of SAE participation and academic, social, and emotional self-efficacy.

## Description of the Participants

The student population for this study included participants from four agricultural education programs in the North District of Alabama. A total of 427 students between the ages of 14-18 submitted the SEQ-C and general information questionnaire. Of the 427 questionnaires submitted, only 368 were fully completed and used in data analysis. The population consisted of 279 males and 89 females (Table 1).

Table 1

### *Gender Frequency of Population*

	Frequency	Percent	Valid Percent	Cumulative Percent
Male	279	75.8	75.8	75.8
Valid Female	89	24.2	24.2	100.0
Total	368	100.0	100.0	

Participants varied in the number agricultural education courses taken. The participants

ranged from taking one course to five courses in agricultural education. Most participants, 151 students (41%), had only taken one agricultural education course (Table 2). Of the remaining participants, 105 students (28.5%) had taken two agricultural education courses, 62 students (16.8%) had taken three agricultural education courses, 35 students (9.5%) had taken four agricultural education courses, and 15 students (4.1%) had taken five agricultural education courses (Table 2).

Table 2

*Number of Agricultural Education Courses Taken*

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	151	41.0	41.0	41.0
2	105	28.5	28.5	69.6
3	62	16.8	16.8	86.4
4	35	9.5	9.5	95.9
5	15	4.1	4.1	100.0
Total	368	100.0	100.0	

FFA participation was utilized as a dichotomous variable for data analysis since the data collected wasn't continuous and by creating two groups (participants and non-participants) the assumptions of multiple regression were maintained. Data analysis determined that 239 students participated in FFA activities and 129 did not (Table 3). Student participation in FFA was collected using the following scale: 1 = 0 FFA activities participated in, 2 = 1 FFA activity participated in, 3 = 2 FFA activities participated in, 4 = 3 FFA activities participated in, and 5 = 4 or more FFA activities participated in. The largest category of participants, 129 students (35.1%), had participated in no FFA activities (Table 4). The next highest percentage of participants, 99 students (26.9%), had participated in one FFA activity (Table 4). Next, 60 students (16.3%) had participated in two FFA activities (Table 4). Twenty-one participants (5.7%) had participated in three FFA activities (Table 4). Finally, 59 students (16%) had

participated in four or more FFA activities (Table 4).

Table 3

*FFA Participation*

	Frequency	Percent	Valid Percent	Cumulative Percent
No	129	35.1	35.1	35.1
Valid Yes	239	64.9	64.9	100.0
Total	368	100.0	100.0	

Table 4

*Level of FFA Participation*

# of Events	Frequency	Percent	Valid Percent	Cumulative Percent
0	129	35.1	35.1	35.1
1	99	26.9	26.9	62.0
2	60	16.3	16.3	78.3
Valid 3	21	5.7	5.7	84.0
4 or more	59	16.0	16.0	100.0
Total	368	100.0	100.0	

SAE involvement was utilized as a dichotomous variable in data analysis (less than 10 hours and more than 10 hours) since the collected data wasn't considered continuous. The majority of participants, 193 (52.4%) spent more than ten hours per semester working on their SAE, while 175 participants spent less than ten hours per semester working on their SAE (Table 5). Student involvement with SAE was collected using the following scale: 1 = 0-10 hours per semester, 2 = 10-20 hours per semester, 3 = 20-30 hours per semester, 4 = 30-40 hours per semester, and 5 = more than 40 hours per semester. The majority of the participants, 175 students (47.6%), indicated that they spent less than 10 hours per semester on their SAE (Table 6). The second largest group of participants, 79 students (21.5%), spent between 11 and 20 hours per semester working on their SAE (Table 6). Students that spent more than 40 hours per

semester were the third largest majority, 62 students (16.8%) (Table 6). Students who spent between 21 and 30 hours per semester on their SAE represented 40 participants (10.9%) (Table 6). Finally, 12 students (3.3%) spent between 31 and 40 hours per semester on their SAE (Table 6).

Table 5  
*Participant SAE Involvement*

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Less than 10 hours	175	47.6	47.6	47.6
Valid More than 10 hours	193	52.4	52.4	100.0
Total	368	100.0	100.0	

Table 6  
*Amount of Time Spent on SAE per Semester*

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 10 hours or less	175	47.6	47.6	47.6
Valid 11-20 hours	79	21.5	21.5	69.0
Valid 21-30 hours	40	10.9	10.9	79.9
Valid 31-40 hours	12	3.3	3.3	83.2
Valid More than 40 hours	62	16.8	16.8	100.0
Total	368	100.0	100.0	

### **Descriptive Statistics for the Self-Efficacy Questionnaire for Children Responses**

First, a Cronbach's alpha was calculated in SPSS for total self-efficacy and each domain of self-efficacy measured by the instrument. The Cronbach's alpha for total self-efficacy was determined to be .900 (Table 7). Next, the Cronbach's alpha for academic self-efficacy was .847, social self-efficacy was .780, and emotional self-efficacy was .796 (Tables 8, 9, & 10)

Table 7

*Total Self-Efficacy SEQ-C Reliability*

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.900	.901	24

Table 8

*Academic Self-Efficacy SEQ-C Reliability*

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.847	.850	8

Table 9

*Social Self-Efficacy SEQ-C Reliability*

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.780	.784	8

Table 10

*Emotional Self-Efficacy SEQ-C Reliability*

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.796	.794	8

Participants completed the SEQ-C and the responses were added together to determine each participants total self-efficacy, academic self-efficacy, social self-efficacy, and emotional self-efficacy score. The SEQ-C is composed of twenty-four question, and each question was answered using a five point likert scale, with 1= Not at all and 5= very well. There were eight

questions for each domain of self-efficacy measured (academic, social, and emotional). SPSS was used to derive the descriptive statistics, mean and standard deviation, for each question on the questionnaire (Table 11).

Table 11

*SEQ-C Descriptive Statistics*

	N	Minimum	Maximum	Mean	Std. Deviation
How Well can you get a teacher to help you when you get stuck on school work?	368	1	5	4.10	.959
How well can you express your opinions when other classmates disagree with you?	368	1	5	3.55	.941
How well do you succeed in cheering yourself up when an unpleasant event has happened?	368	1	5	3.57	1.137
How well can you study when there are other interesting things to do?	368	1	5	2.76	1.174
How well do you succeed in becoming calm again when you are very scared?	368	1	5	3.69	.977
How well can you become friends with other children?	368	1	5	4.08	.962
How well can you study a chapter for a test?	368	1	5	3.33	1.110
How well can you have a chat with an unfamiliar person?	368	1	5	3.40	1.115
How well can you prevent to become nervous?	368	1	5	3.27	1.041
How well do you succeed in finishing all your homework every day?	368	1	5	3.55	1.196
How well can you work in harmony with your classmates?	368	1	5	3.69	.963
How well can you control your feelings?	368	1	5	3.78	1.074
How well can you pay attention during every class?	368	1	5	3.55	.992
How well can you tell other children that they are doing something that you don't like?	368	1	5	3.72	1.092

How well can you give yourself a pep-talk when you feel low?	368	1	5	3.33	1.081
How well do you succeed in understanding all subjects in school?	368	1	5	3.60	.925
How well can you tell a funny event to a group of children?	368	1	5	3.79	1.108
How well can you tell a friend that you don't feel well?	368	1	5	3.89	1.003
How well do you succeed in satisfying your parents with your schoolwork?	368	1	5	3.81	.994
How well do you succeed in staying friends with other children?	368	2	5	4.14	.871
How well do you succeed in suppressing unpleasant thoughts?	368	1	5	3.37	1.020
How well do you succeed in passing a test?	368	1	5	3.80	.960
How well do you succeed in preventing quarrels with other children?	368	1	5	3.44	1.029
How well do you succeed in not worrying about things that might happen?	368	1	5	3.34	1.140
Valid N (listwise)	368				

Total self-efficacy had a mean score of 86.57 and a standard deviation of 13.72 (Table 12). The total possible score on the SEQ-C was 120. There were three domains of self-efficacy assessed by the SEQ-C. The three domains assessed were academic, social and emotional self-efficacy. Each domain had a total possible score of 40. Participants' academic self-efficacy had a mean score of 28.51 and a standard deviation of 5.8 (Table 12). The mean score for social self-efficacy was 29.83 and it had a standard deviation of 5.09 (Table 12). Emotional self-efficacy had a mean score of 28.24 and a standard deviation of 5.45 (Table 12).

Table 12

*Academic, Social, and Emotional Self-Efficacy Descriptive Statistics*

	N	Mean	Std. Deviation
Total Self-Efficacy	368	86.5679	13.71929
Academic Self-Efficacy	368	28.5054	5.80378
Social Self-Efficacy	368	29.8261	5.08695
Emotional Self-Efficacy	368	28.2364	5.44740
Valid N (listwise)	368		

**Research Question One**

Research question, “Did the number of agricultural education courses taken, FFA participation, and SAE participation level combined predict a student’s total self-efficacy?” The null hypothesis was that there was not a statistically significant relationship between the three component model of agricultural education and total self-efficacy in this study. In order to determine the relationship between the variables, multiple regression analysis, using the enter method, was run in SPSS. Multiple regression analysis utilizes multiple predictor variables (independent variables) to explain the variance of the dependent variable (Ross & Shannon, 2011). The dependent variable entered into regression analysis was the participant’s total self-efficacy score, and the independent variables entered were number of agricultural education courses taken, FFA participation, and SAE participation. FFA participation and SAE participation were entered as dichotomous variables.

Results from the multiple regression analysis indicate that student participation in each of the components of agricultural education do not serve as valuable predictors of a student’s self-

efficacy. The model summary indicated that all three variables together produced an  $R=.110$  and  $r^2=.012$  (Table 13). The  $r^2$  indicates that the combination of the number of agricultural education courses taken, FFA participation, and SAE participation only explained 1.2% of total self-efficacy's variance. The  $R$  value of .110 indicated a weak relationship between total self-efficacy and the three components of agricultural education.

Table 13  
*Regression Model Summary<sup>b</sup>*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics F	df1	df2	Sig. F Change
1	.110 <sup>a</sup>	.012	.004	13.69257	.012	1.478	3	364	.220

a. Predictors: (Constant), Number of Agricultural Education courses you have taken:, FFA, SAE

b. Dependent Variable: TotalSE

Analysis of variance (ANOVA) was run as a part of the multiple regression analysis. The ANOVA produced an  $F$  value of 1.478 and produced a  $p$ -value of .220 (Table 14). The significance of the  $F$  ratio is  $p>.05$ , which indicates the insignificance of the regression model. ANOVA data indicated the decision to fail to reject the null hypothesis.

Table 14  
*Regression Analysis ANOVA<sup>a</sup>*

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	831.193	3	277.064	1.478	.220 <sup>b</sup>
	Residual	68245.109	364	187.487		
	Total	69076.302	367			

a. Dependent Variable: TotalSE

b. Predictors: (Constant), Number of Agricultural Education courses you have completed:, FFA, SAE

Each of the independent variables produced insignificant beta weights. FFA participation produced a beta of .038 and a *t*-test produced a significance value of .478 ( $p > .05$ ; Table 15). With a *p*-value of .478, FFA participation did not have a great effect when predicting total self-efficacy. The number of agricultural education courses taken by a student produced similar results to FFA participation. A student's number of agricultural education courses taken produced an *F*-value of .049. The results of a *t*-test,  $p = .367$ , indicate that the number of agricultural education courses taken does not have a great effect when predicting total self-efficacy (Table 15). SAE participation produced the largest beta weight,  $\beta = .070$ , but it was still proven insignificant by a *t*-test, which resulted in a *p*-value of .194 (Table 15). The insignificance of each independent variables  $\beta$ 's supported the decision to fail to reject the null hypothesis.

Table 15  
*Regression Analysis Beta Coefficients<sup>a</sup>*

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
	B	Std. Error	Beta			Zero-order	Partial	Part
(Constant)	83.634	1.679		49.805	.000			
FFA	1.095	1.541	.038	.710	.478	.060	.037	.037
SAE	1.923	1.479	.070	1.300	.194	.088	.068	.068
1 Agricultural Education courses you have taken:	.586	.650	.049	.902	.367	.074	.047	.047

a. Dependent Variable: Total Self-Efficacy

Analysis of the independent variables indicated that they did not significantly serve as predictors of total self-efficacy. Data analysis indicated that the independent variables were

highly correlated (Table 16). The number of agricultural education courses taken was significantly correlated with FFA participation ( $r=.214$ ,  $p<.000$ ) and with SAE participation ( $r=.234$ ,  $p<.000$ ; Table 16). SAE participation and FFA participation were significantly correlated which was indicated by  $r=.156$  with a significance of  $p=.001$  (Table 16).

Table 16  
*Three Component Model and Total Self-Efficacy Correlations*

		Total Self- Efficacy	FFA	SAE	Agricultural Education courses taken:
Pearson Correlation	TotalSE	1.000	.060	.088	.074
	FFA	.060	1.000	.156	.214
	SAE	.088	.156	1.000	.234
	Number of Agricultural Education courses taken:	.074	.214	.234	1.000
	TotalSE	.	.127	.047	.079
Sig. (1-tailed)	FFA	.127	.	.001	.000
	SAE	.047	.001	.	.000
	Number of Agricultural Education courses taken:	.079	.000	.000	.

When independent variables are highly correlated, they essentially convey the same information, which may cause the regression results to show multicollinearity (Ross & Shannon, 2011).

Multicollinearity increases the standard errors of the coefficients which may cause the coefficients to show that they are insignificant (Ross & Shannon, 2011). In order to ensure that multicollinearity didn't impact the regression model, collinearity statistics were calculated. The collinearity statistics calculated were tolerance and the variance inflation factor (VIF). When assessing multicollinearity, if the VIF is over five and the tolerance is low, multicollinearity is a problem (Ross and Shannon, 2011). The number of agricultural education courses taken

produced a VIF=1.095 and a tolerance of .914 (Table 17). FFA participation produced a VIF=1.061 and a tolerance of .943 (Table 17). SAE participation produced a VIF= 1.071 and a tolerance of .934 (Table 17). Each independent variable had a VIF below five and produced a high tolerance which indicated that multicollinearity was not an issue in the model.

Table 17  
*Regression Model Collinearity Statistics<sup>a</sup>*

Model	Collinearity Statistics		
	Tolerance	VIF	
	FFA	.943	1.061
	SAE	.934	1.071
1	Number of Agricultural Education courses you have completed:	.913	1.095

a. Dependent Variable: TotalSE

## Research Question 2

What was the relative value of the number of agricultural education courses taken, FFA participation, and SAE participation in predicting a student’s total self-efficacy? The null hypothesis is that the number of agricultural education courses taken, FFA participation, and SAE participation will not have a significant value in predicting total self-efficacy in this study.

This research question was analyzed using standard multiple regression. Hierarchical multiple regression was to be utilized, but the insignificance of each component in the agricultural education model of predicting total self-efficacy resulted in no variable being entered into the hierarchical regression model. In order to assess the uniqueness of each variable in explaining the variance of total self-efficacy, the partial and semi-partial correlations were analyzed. A partial correlation partials out the shared variance of the independent variables and

dependent variable while comparing the shared variance of one independent variable with the dependent variable (Ross & Shannon, 2011). A semi-partial correlation partials out the shared variance between independent variables while comparing one independent variable to the dependent variable (Ross & Shannon, 2011).

Data analysis revealed that the combination of the number of agricultural education courses taken, FFA participation, and SAE participation did not significantly explain the variance of total self-efficacy. By analyzing the semi-partial correlations of each of the independent variables, none significantly explained the variance of total self-efficacy. The number of agricultural education courses taken had a partial and semi-partial correlation of .047 which indicated significantly less than 1% of the explained variance of total self-efficacy (Table 18). FFA participation produced a partial and semi-partial correlation value of .037, which indicated significantly less than 1% of the explained variance of total self-efficacy (Table 18). SAE participation produced a partial and semi-partial correlation of .068, which indicated significantly less than 1% of the explained variance of total self-efficacy (Table 18). The data indicates that none of the independent variables significantly explain any of the variance of the total self-efficacy score.

Table 18  
*Partial and Semi-Partial Correlations<sup>a</sup>*

Model	Correlations		
	Zero-order	Partial	Part
FFA	.060	.037	.037
SAE	.088	.068	.068
1 Agricultural Education courses you have completed:	.074	.047	.047

a. Dependent Variable: TotalSE

### **Research Question Three**

What was the relationship between the number of agricultural education courses taken and a student's academic, social, and emotional self-efficacy? The null hypothesis states that there was not statistically significant relationship between the number of agricultural education courses and academic, social, and emotional self-efficacy in this study. To determine the relationship between the variables, MANOVA was utilized in SPSS. The priori alpha level was set at  $p = .05$ .

Data analysis produced the descriptive statistics mean and standard deviation to describe SEQ-C scores for each domain based on the number of agricultural education courses taken (Table 19). Each domain of self-efficacy had a possible score of 40, and the number of agricultural education courses taken ranged from 1 to 5.

First, academic self-efficacy was described in association with the number of agricultural courses taken by students. Participants ( $N=151$ ) who had taken at least one agricultural education course had a mean score of 28.2 and a standard deviation of 6.2 in the academic self-efficacy domain (Table 19). Next, participants ( $N=105$ ) who had taken at least two agricultural education courses had a mean score of 28.8 and a standard deviation of 5.57 in the academic self-efficacy domain (Table 19). Participants ( $N=62$ ) who had taken at least three agricultural education courses had a mean score of 29.16 and a standard deviation of 5.18 in the academic self-efficacy domain (Table 19). Finally, participants ( $N=35$ ) who taken at least four agricultural education courses had a mean score of 26.82 with a standard deviation of 5.66 and participants ( $N=15$ ) who had taken at least five agricultural education courses had a mean score of 30 and a standard deviation of 5.43 in the academic self-efficacy domain (Table 19).

Second, social self-efficacy was described in association with the number of agricultural

education courses taken by participants. Participants (N=151) who had taken at least one agricultural education course had a mean score of 29.14 and a standard deviation of 5.25 in the social self-efficacy domain (Table 19). Next, participants (N=105) who had taken at least two agricultural education courses had a mean score of 30.34 and a standard deviation of 5.07 in the social self-efficacy domain (Table 19). Participants (N=62) who had taken at least three agricultural education courses had a mean score of 30.33 and a standard deviation of 4.85 in the social self-efficacy domain (Table 19). Finally participants (N=35) who taken at least four agricultural education courses had a mean score of 29.88 with a standard deviation of 4.81 and participants (N=15) who had taken at least five agricultural education courses had a mean score of 30.8 and a standard deviation of 4.75 in the social self-efficacy domain (Table 19).

Finally, emotional self-efficacy was described in association with the number of agricultural education courses taken by participants. Participants (N=151) who had taken at least one agricultural education course had a mean score of 27.76 and a standard deviation of 5.71 in the emotional self-efficacy domain (Table 19). Next, participants (N=105) who had taken at least two agricultural education courses had a mean score of 28.36 and a standard deviation of 4.96 in the emotional self-efficacy domain (Table 19). Participants (N=62) who had taken at least three agricultural education courses had a mean score of 28.51 and a standard deviation of 5.25 in the emotional self-efficacy domain (Table 19). Finally participants (N=35) who taken at least four agricultural education courses had a mean score of 28.2 with a standard deviation of 5.95, and participants (N=15) who had taken at least five agricultural education courses had a mean score of 31.06 and a standard deviation of 5.24 in the emotional self-efficacy domain (Table 19).

Table 19

*Descriptive Statistics for the Number of Agricultural Education Courses Taken and Academic, Social, and Emotional Self-Efficacy*

	Number of Agricultural Education courses:	Mean	Std. Deviation	N
	1	28.2384	6.22008	151
	2	28.8476	5.57429	105
Academic Self-Efficacy	3	29.1613	5.18571	62
	4	26.8286	5.66457	35
	5	30.0000	5.43796	15
	Total	28.5054	5.80378	368
	1	27.7616	5.71164	151
	2	28.3619	4.96550	105
Emotional Self-Efficacy	3	28.5161	5.25027	62
	4	28.2000	5.95473	35
	5	31.0667	5.24359	15
	Total	28.2364	5.44740	368
	1	29.1457	5.25534	151
	2	30.3429	5.07791	105
Social Self- Efficacy	3	30.3387	4.85847	62
	4	29.8857	4.81280	35
	5	30.8000	4.75395	15
	Total	29.8261	5.08695	368

MANOVA (Table 20) analysis between the number of agricultural education courses taken (independent variable) and the three domains of self-efficacy (dependent variables) measured by the SEQ-C indicated that there was no statistically significant effect of the number of agricultural education courses taken and the domains of self-efficacy. The Pillai's Trace test produced an F-value of 1.2 with a significance of  $p=.278$  (Table 20). The Wilks' Lambda produced an F-value of 1.195 with a significance of  $p=.282$  (Table 20). Next, the Hotelling's

Traces produced an F-value of 1.189 with a significance of  $p=.285$  (Table 20). Finally, the Roy's Largest Root produced an F-value of 1.433 with a significance of  $p=.222$  (Table 20). Each of the four test resulted in an insignificant F-value which supports the decision to fail to reject the null hypothesis. In other words, there is not a statistically significant relationship between the number of agricultural education courses and each domain of self-efficacy.

Table 20

*MANOVA Results for Number of Agricultural Education Courses and Academic, Social, and Emotional Self-Efficacy*

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.958	2711.159 <sup>b</sup>	3.000	361.000	.000
	Wilks' Lambda	.042	2711.159 <sup>b</sup>	3.000	361.000	.000
	Hotelling's Trace	22.530	2711.159 <sup>b</sup>	3.000	361.000	.000
	Roy's Largest Root	22.530	2711.159 <sup>b</sup>	3.000	361.000	.000
# of Ag Courses Taken	Pillai's Trace	.039	1.200	12.000	1089.000	.278
	Wilks' Lambda	.961	1.195	12.000	955.408	.282
	Hotelling's Trace	.040	1.189	12.000	1079.000	.285
	Roy's Largest Root	.016	1.433 <sup>c</sup>	4.000	363.000	.222

As part of the multivariate analysis, univariate tests (ANOVA) were performed to analyze each domain of self-efficacy with the number of agricultural education classes taken by participants. The results of the univariate between subjects test (Table 21) indicated that the number of agricultural education courses taken didn't have a statistically significant effect on any of the domains of self-efficacy (academic, social, and emotional). An F-value of 1.353 with a significance of  $p=.250$  was determined in the ANOVA for academic self-efficacy and the number of agricultural education courses taken (Table 21). Next, an ANOVA performed between social self-efficacy and the number of agricultural education courses taken produced an F-value of 1.246 with a significance of  $p=.291$  (Table 21). The final ANOVA between

emotional self-efficacy and the number of agricultural education courses taken produced and F-value of 1.360 with a significance of  $p=.247$  (Table 21). Each ANOVA performed, produced an F-value with a significance greater than the established priori of .05, which indicated that the number of agricultural courses didn't have a statistically significant impact on the academic, social, and emotional domains of self-efficacy. These results supported the decision of fail to reject the null hypothesis.

Table 21

*Agricultural Education Courses ANOVA Results*

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
# Ag Ed Course Taken	ASE	181.651	4	45.413	1.353	.250
	ESE	160.750	4	40.188	1.360	.247
	SSE	128.588	4	32.147	1.246	.291

#### **Research Question Four**

What was the relationship between student involvement in FFA and a student's academic, social, and emotional self-efficacy? The null hypothesis was there was not a statistically significant relationship between FFA participation and academic, social and emotional self-efficacy in this study. FFA participation was coded to become a dichotomous variable since the data collected on the questionnaire wasn't continuous. Students were determined to either participate in FFA activities or as non-participants. To determine the relationship between the variables, MANOVA was utilized in SPSS. The p-value for testing significance was set at  $p = .05$ .

Data analysis produced the descriptive statistics mean and standard deviation to describe SEQ-C scores for each domain of self-efficacy based on FFA participation (Table 22). Each

domain of self-efficacy had a possible score of 40, and participants were classified as participating in FFA or not participating in FFA.

Students (N=239) that participated in FFA activities had a mean score of 28.8 with a standard deviation of 5.82 in the academic self-efficacy (Table 22). Non-participants (N=129) had a mean score of 27.95 with a standard deviation of 5.73 (Table 22). These descriptive statistics indicated that FFA participants averaged higher scores in the academic domain of self-efficacy than non-participants (Table 22).

Next, students (N=239) that participated in FFA activities had a mean score of 30.02 with a standard deviation of 5.23 in the social self-efficacy domain (Table 22). Non-participants (N=129) had a mean score of 29.46 with a standard deviation of 4.79 in the social self-efficacy domain (Table 22). These descriptive statistics indicated that FFA participants averaged a higher score in the domain of social self-efficacy in comparison to non-FFA participants (Table 22).

Finally, students (N=239) that participated in FFA activities had a mean score of 28.34 with a standard deviation of 5.52 in the emotional self-efficacy domain (Table 22). Students (N=129) who were classified as non-FFA participants had a mean score of 28.03 with a standard deviation of 5.3 in the emotional self-efficacy domain (Table 22). Results from the descriptive statistics indicate that FFA participants averaged higher scores in the emotional self-efficacy domain (Table 22)

Table 22

<i>FFA Participation and Academic, Social, and Emotional Self-Efficacy Descriptive Statistics</i>				
	FFA	Mean	Std. Deviation	N
Academic Self-Efficacy	No	27.9535	5.73893	129
	Yes	28.8033	5.82870	239
	Total	28.5054	5.80378	368
Emotional Self-Efficacy	No	28.0388	5.30831	129
	Yes	28.3431	5.52909	239
	Total	28.2364	5.44740	368
Social Self- Efficacy	No	29.4651	4.79916	129
	Yes	30.0209	5.23518	239
	Total	29.8261	5.08695	368

MANOVA analysis utilizing the standard four multivariate tests indicated that FFA participation did not have a significant effect on academic, social, and emotional self-efficacy (Table 23). The Pillai's Trace, Wilks' Lambda, Hotelling's Trace, and Roy's Largest Root tests all produced an F-value of .699 with a significance of .553 (Table 23). The F-test results corresponding significance values were significantly greater than the set priori alpha value of .05. The greater significance value indicated that there wasn't a statistically significant relationship between FFA participation and the group of dependent variables (academic, social, and emotional self-efficacy). These results supported the decision to fail to reject the null hypothesis.

Table 23

*MANOVA Results for FFA Participation and Academic, Social, and Emotional Self-Efficacy*

Effect	Value	F	Hypothesis df	Error df	Sig.
Pillai's Trace	.974	4499.587 <sup>b</sup>	3.000	364.000	.000
Wilks' Lambda	.026	4499.587 <sup>b</sup>	3.000	364.000	.000
Intercept Hotelling's Trace	37.085	4499.587 <sup>b</sup>	3.000	364.000	.000
Roy's Largest Root	37.085	4499.587 <sup>b</sup>	3.000	364.000	.000
Pillai's Trace	.006	.699 <sup>b</sup>	3.000	364.000	.553
Wilks' Lambda	.994	.699 <sup>b</sup>	3.000	364.000	.553
FFA Hotelling's Trace	.006	.699 <sup>b</sup>	3.000	364.000	.553
Roy's Largest Root	.006	.699 <sup>b</sup>	3.000	364.000	.553

Following MANOVA, individual ANOVA's were conducted between FFA participation and each of the domains of self-efficacy. The first ANOVA between FFA participation and academic self-efficacy produced an F-value of 1.8 with a significance of  $p=.180$  (Table 24). The large p-value indicated that FFA participation didn't have a statistically significant effect on academic self-efficacy. The second ANOVA between FFA participation and social self-efficacy produced an F-value of 1.00 with a significance value of  $p=.318$  (Table 24). The large p-value indicated that FFA participation didn't have a statistically significant effect on social self-efficacy. Finally, the third ANOVA between FFA participation and emotional self-efficacy produced an F-value of .261 with a significance value of  $p=.610$  (Table 24). The F-tests large p-value indicated that FFA participation didn't have a statistically significant effect on emotional self-efficacy, which supported the decision to fail to reject the null hypothesis.

Table 24

*FFA Participation and Academic, Social, and Emotional Self-Efficacy ANOVA Results*

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
FFA	ASE	60.511	1	60.511	1.800	.181
	ESE	7.760	1	7.760	.261	.610
	SSE	25.881	1	25.881	1.000	.318

### Research Question Five

What was the relationship between student involvement with SAE and a student's academic, social, and emotional self-efficacy? The null hypothesis indicated that there wouldn't be a statistically significant relationship between SAE participation and academic, social and emotional self-efficacy in this study. SAE participation was used as a dichotomous variable since data collected from the questionnaire wasn't continuous. Participation level was set at students who spent 10 hours or less on their SAE per semester and students who spent more than 10 hours per semester on their SAE. Spending less than 10 hours per semester on SAE was determined to be low participation. MANOVA was used to assess the relationship between SAE involvement and the three domains of self-efficacy. The p-value for assessing statistical significance was set at  $p=.05$ .

Data analysis produced the descriptive statistics mean and standard deviation to describe SEQ-C scores for each domain of self-efficacy based on SAE involvement (Table 25). Each domain of self-efficacy had a possible score of 40, and participants were grouped based on whether they spent 10 hours or less on their SAE per semester or more than 10 hours on their SAE per semester.

First, students (N=193) that spent more than 10 hours on their SAE per semester had a

mean score of 28.77 with a standard deviation of 6.02 in the academic self-efficacy domain.

Students (N=175) who spent less than 10 hours per semester on their SAE had a mean score of 28.21 with a standard deviation of 5.56 in the academic self-efficacy domain (Table 25). These results indicate that students who spent more time on their SAE each semester had higher levels of academic self-efficacy.

Second, students (N=193) that spent more than 10 hours per semester on their SAE had a mean score of 30.37 with a standard deviation of 4.68 in the social self-efficacy domain (Table 25). On the other hand, students (N=175) who spent less than 10 hours on their SAE per semester had a mean score of 29.22 with a standard deviation of 5.45 in the social self-efficacy domain (Table 25). These descriptive results indicated that students who spent more time on their SAE per semester had higher levels of social self-efficacy.

Finally, students (N=193) that spent more than 10 hours per semester on their SAE had a mean score of 28.56 with a standard deviation of 5.15 in the emotional self-efficacy domain (Table 25). In contrast, students (N=175) who spent less than 10 hours per semester on their SAE had a mean score of 27.87 with a standard deviation of 5.74 in the emotional self-efficacy domain (Table 25). These results indicated that students who spent more time on their SAE per semester had higher levels of emotional self-efficacy.

Table 25

*SAE Participation and Academic, Social, and Emotional Self-Efficacy Descriptive Statistics*

SAE	Mean	Std. Deviation	N
Less than 10 hours	28.2114	5.56631	175
ASE More than 10 hours	28.7720	6.01299	193
Total	28.5054	5.80378	368
Less than 10 hours	29.2229	5.45004	175
SSE More than 10 hours	30.3731	4.68105	193
Total	29.8261	5.08695	368
Less than 10 hours	27.8743	5.74418	175
ESE More than 10 hours	28.5648	5.15663	193
Total	28.2364	5.44740	368

MANOVA analysis was performed to assess the impact of SAE participation on the domains of self-efficacy measured by the SEQ-C (academic, social, and emotional). Results from the MANOVA tests indicated that level of SAE participation did not have a statistically significant effect on academic, social, and emotional self-efficacy as a group. All four multivariate tests used in MANOVA (Pillai's Trace, Wilks' Lambda, Hotelling's Trace, Roy's Largest Root) produced F-values of 1.606 with significance values of  $p=.188$  which supported the decision to fail to reject the null hypothesis (Table 26).

Table 26

*MANOVA Results for SAE Participation and Academic, Social, and Emotional Self-Efficacy*

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	.976	4980.529	3.000	364.000	.000	.976
	Wilks' Lambda	.024	4980.529	3.000	364.000	.000	.976
	Hotelling's Trace	41.048	4980.529	3.000	364.000	.000	.976
	Roy's Largest Root	41.048	4980.529	3.000	364.000	.000	.976
	Pillai's Trace	.013	1.606	3.000	364.000	.188	.013
SAE	Wilks' Lambda	.987	1.606	3.000	364.000	.188	.013
	Hotelling's Trace	.013	1.606	3.000	364.000	.188	.013
	Roy's Largest Root	.013	1.606	3.000	364.000	.188	.013
	Pillai's Trace	.013	1.606	3.000	364.000	.188	.013

ANOVA's were performed to analyze the impact of SAE involvement with academic, social, and emotional self-efficacy independently. First, an ANOVA between SAE participation level and academic self-efficacy produced an F-value of .856 with a significance of  $p=.355$ , which indicated that SAE participation level did not have a statistical significant effect on a student's academic self-efficacy (Table 27). Next, an ANOVA between SAE participation level and emotional self-efficacy produced an F-value of 1.477 with a significance value of  $p=.255$ , which indicated that the level of student participation with an SAE did not have a statistical significant effect on their emotional self-efficacy (Table 27). Finally, an ANOVA between SAE participation level and social self-efficacy produced an F-value of 4.740 with a significance value of  $p=.030$ , which indicated that SAE participation had a statistically significant impact on a student's social self-efficacy (Table 27). The results of the ANOVA between level of SAE

participation and social self-efficacy indicated as the level of SAE participation increased it increased the student's level of social self-efficacy. One drawback to the results was a significant Levene's test of equality of error variances which produced a significant F-value [F(1,366) =4.093 with a p<.05], which indicated that we reject the null hypothesis and homogeneity of variance cannot be assumed (Table 28). Since the groups in the sample are considered equal (N=193 and N=175), larger group not more than 1 ½ times larger than the smaller group, then this was not considered a major issue and results from the ANOVA were accepted (Understanding the one-way ANOVA, nd., p. 6).

Table 27

*SAE Participations and Academic, Social, and Emotional Self-Efficacy ANOVA Results*

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
SAE	ASE	28.843	1	28.843	.856	.355	.002
	SSE	121.421	1	121.421	4.740	.030	.013
	ESE	43.757	1	43.757	1.477	.225	.004

Table 28

*Levene's Test of Equality of Error Variances*

	F	df1	df2	Sig.
ASE	2.335	1	366	.127
SSE	4.093	1	366	.044
ESE	2.195	1	366	.139

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + SAE

## Chapter 5

### Summary, Conclusions, Limitations, Recommendations

#### Summary

##### **Purpose**

The purpose of this quantitative descriptive, correlational, and multiple regression study was to determine if the number of agricultural education courses, FFA participation, and level of SAE involvement served as statistically significant predictors of a student's total self-efficacy. Also, this study sought to determine the relationship between the three domains of self-efficacy assessed by the SEQ-C (academic, social, and emotional) and the three components of agricultural education.

##### **Assumptions**

The following assumptions were made concerning this study:

1. Students will answer the Self-Efficacy Questionnaire for Children (SEQ-C) truthfully.
2. Students will provide accurate answers about the number of agricultural education courses they have taken, number of FFA activities they have participated in, and the amount of time they spend on their SAE.
3. The SEQ-C and agricultural education information questionnaire were the appropriate instruments for the study.
4. Sufficient data was provided by the 368 students who completed the SEQ-C and agricultural education information questionnaire.

##### **Research Questions**

1. Did the number of agricultural education courses taken, FFA participation, and SAE participation together predict a student's total self-efficacy?

2. What was the unique value of the number of agricultural education courses taken, FFA participation, and SAE participation in predicting a student's total self-efficacy?
3. What was the relationship between classroom and laboratory instruction and a student's academic, social, and emotional self-efficacy?
4. What was the relationship between student involvement in FFA and a student's academic, social, and emotional self-efficacy?
5. What was the relationship between student involvement with SAE and a student's academic, social, and emotional self-efficacy?

### **Null Hypothesis**

1. There were no statistically significant differences in the number of agricultural education course taken, FFA participation, and level of SAE involvement to predict total self-efficacy.
2. There was no statistical significant difference in the unique value of each of the three components of agricultural education in predicting total self-efficacy.
3. There was no statistically significant difference in the relationship between the number of agricultural education courses taken and academic, social, and emotional self-efficacy.
4. There was no statistically significant difference in the relationship between student FFA participation and academic, social, and emotional self-efficacy.
5. There was no statistically significant difference in the relationship between a student's level of SAE participation and academic, social, and emotional self-efficacy.

### **Population**

The population of this study consisted of agricultural education students from four high schools in the North District of Alabama that ranged in age from 14-18. Alabama is divided into

three districts as it relates to FFA: North, Central, and South (See Appendix F). Every high school that has an agricultural education program was contacted for participation in the study. Of the 296 FFA chapters, only four opted to participate in the study. Each chapter that participated in the study was asked to administer the SEQ-C and the general information questionnaire. The general information questionnaire was developed to gather information about the participant's gender and level of participation in each of the three components of agricultural education. A total of 427 surveys were submitted, but only 368 were complete. Only the completed surveys were considered in this study.

### **Research Design**

To complete the study, a quantitative research design was used. The researcher utilized multiple regression and Multivariate Analysis of Variance (MANOVA) to analyze data and draw conclusions. According Ross and Shannon (2011), "Multiple regression is an extension of simple regression in that, instead of using one predictor or independent variable, multiple predictor or independent variables are used" (p. 154). According Mertler and Vannatta (2010), "MANOVA is designed to test the significance of group differences" (p. 117). MANOVA allows the analysis of group differences using multiple dependent variables while maintaining an overall error rate of .05 (Mertler & Vannatta, 2010). In this study, self-efficacy and the three components of agricultural education were examined for a relationship. Participants in the study were administered the Self-Efficacy Questionnaire for Children (SEQ-C) and a brief questionnaire to gather information about their level of participation in agricultural education (number of courses taken, FFA participation, and amount of time spent on SAE). Descriptive statistics (frequencies, means, and standard deviations) were used to describe the population, independent variables and the dependent variable.

## **Variables**

The variables in this study are the participant's self-efficacy, number of agricultural education courses taken, FFA participation, and amount of time spent on SAE. Self-efficacy is the dependent variable, and three components of the agricultural education model are the independent variables. Total self-efficacy scores were derived from the addition of a student's determined academic, social, and emotional self-efficacy. Academic, social, and emotional self-efficacy was variables correlated with each of the three components of the agricultural education model.

## **Instrumentation**

The first instrument used to collect data was the *Self-Efficacy Questionnaire for Children* (SEQ-C; Muris, 2001; See Appendix G). The SEQ-C, according to Muris (2001) is a self-report instrument that contains twenty-four items that analyze three domains of self-efficacy, which are: academic, social, and emotional. Each domain is measured through eight questions that are scored on a 5 point scale with 1 being "Not at all" and 5 being "Very well". It was understood that 2, 3, and 4 on the scale were different levels of measurement but there were no stated descriptors for the values since the instrument wasn't modified from its original version. A general self-efficacy score is generated by tallying the scores across all three domains. According to Muris (as cited in Moree, 2010), "The scale has been shown to demonstrate good construct validity via strong correlations with Muris, Schmidt, Lambrichs and Meesters' (2001) Negative Attributions Questionnaire and Bijstra, Jackson, and Bosma's (1994) Coping List measure" (p. 25). Also, in a study by Suldo and Huebner (as cited in Moree, 2010), the SEQ-C was found to have an internal consistency reliability of .82 for the academic subscale, .78 for the emotional subscale, and .76 for the social subscale. In a study by Muris (2001) the SEQ-C was

found to have an internal consistency reliability that was satisfactory. Muris (2001) determined that Cronbach's  $\alpha$  were .88 for total self-efficacy scores and between .85 and .88 for the subscale scores.

A general questionnaire (See appendix H) developed by the researcher was used to gather data about the participants participation in agricultural education. The general questionnaire had participants indicate their gender, number of agricultural education courses they had taken, the number FFA activities they had participated in, and the amount of time they spent on their SAE per semester. Students were to select a response for each question on the instrument. The number of agricultural education courses ranged from a selection of 1 to 5 possible courses taken. The possible responses for FFA participation ranged from 1, meaning 0 FFA activities participated in, to 5, meaning 4 or more FFA activities participated in. For statistical analysis, FFA participation was utilized as a dichotomous variable and entered as either a student participated in FFA or they didn't. FFA participation was utilized as a dichotomous variable since the data collected could not be considered continuous, and by producing two groups the assumptions of multiple regression were maintained. The reason data were collected, number of FFA activities actually participated in, was to provide a better description of the participants instead of just describing them as participants or non-participants. The amount of time spent working on their SAE per semester was divided into ranges where 1 indicated 0-10 hours spent on SAE and a 5 indicated 40 or more hours spent working on an SAE. Responses for SAE involvement were divided into spending "less than 10 hours" or spending "more than 10 hours" per semester working on SAE. Spending less than ten hours per semester on SAE was considered low participation for this study. SAE participation was utilized as a dichotomous variable for statistical purposes since the data collected could not be considered continuous, and

by producing two groups, the assumptions of multiple regression were maintained. The reason data were collected as ranges of hours spent on SAE each semester was to provide a more accurate description of the participant's level of SAE participation.

In order to enlist participants in the study, the researcher made initial contact with agriculture teachers, from Alabama, at district and state FFA events during the Spring 2013. The informal discussions, with the teachers, at that time were informal and utilized to inform them about the upcoming study. Once IRB approval had been granted, an informational email was sent to each agricultural education teacher, in Alabama, explaining the importance of the study and soliciting the teachers help with securing their students participation in the study (See Appendices I, J, & K). Follow up emails, two total, were sent at 10 day intervals. According to Dillman (2000), "a well done survey was likely to exhibit a series of four carefully timed contacts" (pg.1). Also, the informational email explained the need for the teacher to serve as a liaison in securing their schools permission for their students to participate in the study. In order for students to participate in the study, IRB mandated that schools participating in the study must submit an approval letter on official school letterhead and signed by an administrator. The letter must have included the schools consent to let their students participate in the study, that they understood how students would consent, and how data would be collected (See Appendix L). Once a school submitted an approval letter, each student participant was asked to submit the minor assent form if they were willing to participate, and they didn't have to submit the parental consent form if their parents didn't mind them participating. Once minor assent forms and non-participant parental consent forms were collected, the questionnaires were delivered to participants through an electronic survey mode using Qualtrics. An electronic survey mode was utilized since teachers had access to computer labs that their students could use to complete the

survey. Also, the electronic survey was utilized in an effort to increase the response rate.

Confidentiality of the participants' and their responses were maintained due to the data being collected anonymously. Identifiable data were not collected from participants, so linking individuals to surveys were impossible. All responses were collected and maintained by Qualtrics.com® on a secure database.

### **Data Collection**

Once approval for the study was given from Auburn University's Institutional Review Board (See Appendix B), the researcher began the process of data collection. Before any student could receive information about the study, permission had to be granted from the school. A letter signed by an administrator, indicating that they understood the process of the study, had to be on file before possible participants could receive information about the study. This information was contained in the email sent to each agricultural education teacher, and in each of the two follow-up emails sent seeking their help. Once school permission had been granted, the agricultural education teacher at the school printed each student an information letter, consent forms for parental permission, and assent forms (See Appendices C, D, &E). The consent forms that requested parental permission for their child to participate in the study only had to be returned to the researcher if they didn't want their child to participate. Each participant had to sign an assent form, since many of the participants are under the age of 18. The assent forms were mailed to the researcher, and filed in a locked filing cabinet. Once all forms had been submitted, the participants completed the online questionnaire through Qualtrics.com®. The survey was available for five weeks.

### **Data Analysis**

Quantitative data gathered from the questionnaires were analyzed using the Statistical

Package for Social Sciences (SPSS). Analysis consisted of descriptive statistics which allowed the researcher to analyze means, medians, frequencies and standard deviations. Multiple regression analysis was used to determine the explained variance of the dependent variable (total self-efficacy) by the independent variables (number of agricultural education courses completed, FFA participation, and SAE involvement per semester). Also, multiple regression was used to determine if a predictive equations could be determined using the independent variables to predict the dependent variable. MANOVA was utilized to analyze any group mean differences that may exist between each component of the agricultural education model (number of courses taken, FFA participation, SAE involvement) and three domains of self-efficacy (academic, social, emotional).

Research Question 1, “Did the number of agricultural education courses taken, FFA participation, and SAE participation together predict a student’s total self-efficacy?” Data collected were analyzed using multiple regression analysis. Each participant’s general self-efficacy score was tabulated by summing their scores from all three domains (academic, social, and emotional) of self-efficacy measured on the SEQ-C, and was entered as the dependent variable in regression analysis. Participant responses to the questions pertaining to number of agricultural education classes completed, FFA participation, and the amount of time spent on SAE per semester were entered as independent variables in the regression analysis. The enter method was utilized for multiple regression analysis.

Research Question 2, “What was the relative value of classroom and laboratory instruction, FFA participation, and SAE participation in predicting a student’s total self-efficacy?” Data collected were analyzed using multiple regression. For this particular research question, hierarchal multiple regression analysis was used. Each participant’s general self-

efficacy score was tabulated by summing their scores from all three domains (academic, social, and emotional) of self-efficacy measured on the SEQ-C, and this was entered as the dependent variable in regression analysis. Participants' responses to the questions pertaining to number of agricultural education classes completed, FFA participation, and the amount of time spent on SAE per semester were entered as independent variables in the regression analysis. In the case that no significant explanation of variance was determined by multiple regression utilizing the enter method, each independent variable would be analyzed by partial and semi-partial correlations. The examination of partial and semi-partial correlations provides information on the variance of the dependent variable explained by the independent variables.

Research Question 3, "What was the relationship between the number of agricultural education courses taken and a student's academic, social, and emotional self-efficacy?" Data collected were analyzed using multivariate analysis of variance (MANOVA) in SPSS. MANOVA was used since it allows the analysis of the effect an independent variable (number of agricultural education courses taken) has on multiple dependent variables (academic, social, and emotional self-efficacy). Data analyzed through MANOVA are examined for relationships through the results of four separate multivariate tests, which are as follows: Pillar's Trace, Wilks' Lambda, Hotelling's Trace, and Roy's Largest Root. Each multivariate test produces an F-value that was determined to be significant based on its associated p-value. Results of each multivariate test indicated whether the independent variable has an effect on the dependent variables as a group. Also, output from MANOVA produces individual analysis of variance (ANOVA) tests that examined the significance of each dependent variable to the independent variable. Results of the ANOVA's were examined for significance by analyzing the F-value and its associated p-value. For the study, a priori alpha value of .05 was established to determine

significance.

Research Question 4, “What was the relationship between student involvement in FFA and a student’s academic, social, and emotional self-efficacy?” Data collected were analyzed using multivariate analysis of variance (MANOVA) in SPSS. MANOVA was used since it allows the analysis of the effect an independent variable (FFA participation) has on multiple dependent variables (academic, social, and emotional self-efficacy). Data analyzed through MANOVA are examined for relationships through the results of four separate multivariate tests, which are as follows: Pillar’s Trace, Wilks’ Lambda, Hotelling’s Trace, and Roy’s Largest Root. Each multivariate test produces an F-value that was determined to be significant based on its associated p-value. Results of each multivariate test indicated whether the independent variable has an effect on the dependent variables as a group. Also, output from MANOVA produces individual analysis of variance (ANOVA) tests that examined the significance of each dependent variable to the independent variable. Results of the ANOVA’s were examined for significance by analyzing the F-value and its associated p-value. For the study, a priori alpha value of .05 was established to determine significance.

Research Question 5, “What was the relationship between student involvement with SAE and a student’s academic, social, and emotional self-efficacy?” Data collected were analyzed using multivariate analysis of variance (MANOVA) in SPSS. MANOVA was used since it allows the analysis of the effect an independent variable (Level of SAE participation) has on multiple dependent variables (academic, social, and emotional self-efficacy). Data analyzed through MANOVA are examined for relationships through the results of four separate multivariate tests, which are as follows: Pillar’s Trace, Wilks’ Lambda, Hotelling’s Trace, and Roy’s Largest Root. Each multivariate test produces an F-value that was determined to be

significant based on its associated p-value. Results of each multivariate test indicated whether the independent variable has an effect on the dependent variables as a group. Also, output from MANOVA produces individual analysis of variance (ANOVA) tests that examined the significance of each dependent variable to the independent variable. Results of the ANOVA's were examined for significance by analyzing the F-value and its associated p-value. For the study, a priori alpha value of .05 was established to determine significance.

## **Results**

The student population for this study included participants from four agricultural education programs in the North District of Alabama. A total of 427 students between the ages of 14-18 submitted the SEQ-C and general information questionnaire. Of the 427 questionnaires submitted, only 368 were fully completed and used in data analysis. The population consisted of 279 males and 89 females.

Participants varied in the number agricultural education courses taken. The participants ranged from taking one course to five courses in agricultural education. Most participants, 151 students (41%), had only taken one agricultural education course. Of the remaining participants, 105 students (28.5%) had taken two agricultural education courses, 62 students (16.8%) had taken three agricultural education courses, 35 students (9.5%) had taken four agricultural education courses, and 15 students (4.1%) had taken five agricultural education courses.

FFA participation was utilized as a dichotomous variable for data analysis, which determined that 239 students participated in FFA activities and 129 did not. The majority of participants, 129 students (35.1%), had participated in no FFA activities. The next highest percentage of participants, 99 students (26.9%), had participated in one FFA activity. Next, 60 students (16.3%) had participated in two FFA activities. Twenty-one participants (5.7%) had

participated in three FFA activities. Finally, 59 students (16%) had participated in four or more FFA activities.

SAE involvement was utilized as a dichotomous variable in data analysis (less than 10 hours and more than 10 hours). The majority of participants, 193 (52.4%) spent more than ten hours per semester working on their SAE, while 175 participants spent less than ten hours per semester working on their SAE. The majority of the participants, 175 students (47.6%), indicated that they spent less than 10 hours per semester on their SAE (Table 6). The second largest group of participants, 79 students (21.5%), spent between 11 and 20 hours per semester working on their SAE. Students that spent more than 40 hours per semester were the third largest majority, 62 students (16.8%). Students who spent between 21 and 30 hours per semester on their SAE represented 40 participants (10.9%). Finally, 12 students (3.3%) spent between 31 and 40 hours per semester on their SAE.

Total self-efficacy had a mean score of 86.57 and a standard deviation of 13.72. The total possible score on the SEQ-C was 120. There were three domains of self-efficacy assessed by the SEQ-C. The three domains assessed were academic, social and emotional self-efficacy. Each domain had a total possible score of 40. Participants' academic self-efficacy had a mean score of 28.51 and a standard deviation of 5.8. The mean score for social self-efficacy was 29.83 and it had a standard deviation of 5.09. Emotional self-efficacy had a mean score of 28.24 and a standard deviation of 5.45.

## **Conclusions**

### **Research Question One**

Did the number of agricultural education courses taken, FFA participation, and SAE participation together predict a student's total self-efficacy? The null hypothesis was that there

was not a statistically significant relationship between the three component model of agricultural education and total self-efficacy in this study. In order to determine the relationship between the variables, multiple regression analysis, using the enter method, was run in SPSS. The dependent variable entered into regression analysis was the participant's total self-efficacy score, and the independent variables entered were number of agricultural education courses taken, FFA participation, and SAE participation. FFA participation and SAE participation were entered as dichotomous variables.

Results from the multiple regression analysis indicate that student participation in each of the components of agricultural education do not serve as valuable predictors of a student's self-efficacy. The model summary indicated that all three variables together produced an  $R=.110$  and  $r^2=.12$ . The  $r^2$  indicates that the combination of the number of agricultural education courses taken, FFA participation, and SAE participation explain only 1.2% of total self-efficacy's variance. The  $R$  value of .110 indicates a weak relationship between total self-efficacy and the three components of agricultural education.

Analysis of variance (ANOVA) was run as a part of the multiple regression analysis. The ANOVA produced an  $F$  value of 1.478 and produced a  $p$ -value of .220. The significance of the  $F$  ratio is  $p>.05$ , which indicates the insignificance of the regression model. ANOVA data indicates that the null hypothesis is accepted. Each of the independent variables produced insignificant beta weights. FFA participation produced a beta of .038 and a  $t$ -test produced a significance value of .478 ( $p>.05$ ). With a  $p$ -value of .478, FFA participation does not have a great effect when predicting total self-efficacy. The number of agricultural education courses taken by a student produced similar results to FFA participation. A student's number of agricultural education courses taken produced an  $F$ -value of .049. Results of the  $t$ -test,  $p=.367$ ,

indicate that the number of agricultural education courses taken do not have an impact when predicting total self-efficacy. SAE participation produced the largest beta weight,  $\beta=.070$ , but it was still proven insignificant by a *t*-test, which resulted in a *p*-value of .194. The insignificance of each independent variables  $\beta$ 's supports the acceptance of the null hypothesis.

Results from the data analysis supported the decision to fail to reject the null hypothesis. The data clearly indicated that the combination of all three components of the agricultural education model do not serve as a significant predictor of total self-efficacy. The results of this do not resemble the results of studies conducted by Akers et al. (2004), Chiasson and Burnett (2001), Erozkhan (2013), Erozkhan and Deniz (2012) and Ricketts, Duncan, & Peake (2006). Results from Chiasson and Burnett (2001) and Ricketts, Duncan, & Peake (2006) indicated that agricultural education students achieved at higher levels on high stakes test in comparison to non-agricultural education students. Also, Ricketts, Duncan, & Peake (2006) determined that students who had been enrolled in at least four agricultural education courses were more involved in FFA and had a higher level of engagement in SAE. Based on the studies by Chiasson & Burnett (2001) and Ricketts, Duncan, & Peake (2006) students who are more engaged in all three components of agricultural education achieve at higher levels on high stakes test, and this can be attributed to the impact of participation in agricultural education. Academic achievement has been closely associated with self-efficacy (Lane and Lane, 2001) and the results from these previous studies support the idea that agricultural education provided students with opportunities to increase their academic self-efficacy. Also, studies conducted by Akers et al. (2004), Erozkhan (2013), and Erozkhan and Deniz (2012) provided support that participation in all three components of agricultural education provide students with the opportunity to increase their social and emotional self-efficacy. These studies provided evidence that the curriculum and

associated activities of agricultural education are conducive to the development of a student's social and emotional self-efficacy. Erozkán (2013) and Erozkán and Deniz (2012) indicated that learned resourcefulness and communication skills are important predictors of social and emotional self-efficacy. Akers et al. (2004) link the findings of Erozkán (2013) and Erozkán and Deniz (2012) to agricultural education. Akers et al. (2004) found that agriculture teachers in Texas, New Mexico, and Oklahoma were implementing many of the items associated with emotional and social self-efficacy into their curriculum. Teachers in the study felt these factors were important to student's development and success in the world. Even with all the support of previous studies linking agricultural education to self-efficacy, the results of the multiple regression analysis did not support the relationship.

### **Research Question Two**

What was the relative value of classroom and laboratory instruction, FFA participation, and SAE participation in predicting a student's total self-efficacy? In other words, what is the unique value of each variable in explaining the total variance of a student's self-efficacy? The null hypothesis is that the number of agricultural education courses taken, FFA participation, and SAE participation will not have a significant value in predicting total self-efficacy in this study.

This research question was analyzed using standard multiple regression. Hierarchical multiple regression was to be utilized, but the insignificance of each component in the agricultural education model of predicting total self-efficacy resulted in no variable being entered into the hierarchical regression model. In order to assess the uniqueness of each variable in explaining the variance of total self-efficacy, the partial and semi-partial correlations were analyzed.

Data analysis revealed that the combination of the number of agricultural education

courses taken, FFA participation, and SAE participation does not significantly explain the variance of total self-efficacy. By analyzing the semi-partial correlations of each of the independent variables, none significantly explained the variance of total self-efficacy. The number of agricultural education courses taken had a partial and semi-partial correlation of .047 which indicates significantly less than 1% of the explained variance of total self-efficacy. FFA participation produced a partial and semi-partial correlation value of .037, which indicates significantly less than 1% of the explained variance of total self-efficacy. SAE participation produced a partial and semi-partial correlation of .068, which indicates significantly less than 1% of the explained variance of total self-efficacy.

The data indicated that none of the independent variables significantly explain any of the total self-efficacy score. Data analysis supports the decision of failing to reject the null hypothesis. Analysis of the data supports the previous multiple regression analysis from question one. None of the components of the three component model of agricultural education serve as a significant predictor of total self-efficacy. Each of the components explained a very small portion of total self-efficacies variance. The amount of variance explained by each component was determined to be insignificant. The results of the study did not support previous research that indicated courses in agricultural education, FFA participation, and SAE supported the development of total self-efficacy by providing students with opportunities to improve their academic, social and emotional development (Akers et. al, 2004; Carter & Neason, 1984; Cheek et al., 1994; Chiasson & Burnett, 2001; Croom & Flowers, 2001; Erozkhan, 2013; Erozkhan & Deniz, 2012; Ramsey & Edwards, 2004; Retallick, 2010; Ricketts, Duncan, & Peake, 2006; Robinson & Haynes, 2011; Scanlon & Burket, 1986; Townsend & Carter, 1983). These prior studies provided support to the influence the components of agricultural education have on the

development of academic, social, and emotional self-efficacy. A multitude of research has linked student participation in a complete agricultural education program to higher achievement on high stakes tests and to overall science achievement (Cheek et al., 1994; Chiasson & Burnett, 2001; Ramsey & Edwards, 2004; Ricketts, Duncan, & Peake, 2006). Academic achievement has been strongly correlated with self-efficacy, and it has been stated that students who have a high self-efficacy tend to perform at higher levels academically (Linnenbrink & Pintrich, 2002). Many factors have been associated with increasing a student's academic self-efficacy such as opportunities for self-evaluations, vicarious learning, school engagement, strategic thinking, and various assessment contexts (Walker, 2003).

Studies have indicated that agricultural education provides many of these opportunities for students and they have been associated with agricultural education student's higher academic achievement (Cheek et al., 1994; Chiasson & Burnett, 2001; Ramsey & Edwards, 2004; Ricketts, Duncan, & Peake, 2006). Also, studies have indicated that participation in FFA and SAE provide students with opportunities to grow emotionally and socially (Akers et al., 2004; Carter & Neason, 1984; Croom & Flowers, 2001; Erozkhan, 2013; Erozkhan & Deniz, 2012; Retallick, 2010; Robinson & Haynes, 2011; Scanlon & Burket, 1986; Townsend & Carter, 1983). Erozkhan (2013) and Erozkhan and Deniz (2012) linked communication skills and learned resourcefulness to social and emotional self-efficacy. Learned resourcefulness has been associated with better cognitive control to regulate emotions, effective problem solving strategies, being goal oriented, and a student being more confident in their ability to self-regulate (Rosenbaum & Ben-Ari, 1985). A study by Carter and Neason (1984) determined that active participation in FFA activities was correlated with leadership development, self-confidence, citizenship, and cooperation. Several studies determined participation in SAE is related to developing life skills

such as problem solving ability, ability to build personal relationships, responsibility, accountability, work ethic, and skills for college (Retallick, 2010; Robinson & Haynes, 2011; Townsend & Carter, 1983). Each of the life skills described by previous research has been associated with the development of social and emotional self-efficacy development.

There has been a tremendous amount of research that has supported a complete agricultural education's impact on self-efficacy, but data from this study didn't support any unique relationship between the number of agricultural education courses taken, FFA participation, and SAE participation level with self-efficacy.

### **Research Question Three**

What was the relationship between the number of agricultural education courses taken and a student's academic, social, and emotional self-efficacy? The null hypothesis states there was no statistically significant difference in the relationship between the number of agricultural education courses taken and academic, social, and emotional self-efficacy in this study. To determine the relationship between the variables, MANOVA was utilized in SPSS. The significance level was set at  $p=.05$ .

What was the relationship between the number of agricultural education courses taken and a student's academic, social, and emotional self-efficacy? The null hypothesis states that there was not statistically significant relationship between the number of agricultural education courses and academic, social, and emotional self-efficacy. To determine the relationship between the variables, MANOVA was utilized in SPSS. The priori alpha level was set at  $p =.05$ .

Data analysis produced the descriptive statistics mean and standard deviation to describe SEQ-C scores for each domain based on the number of agricultural education courses taken. Each domain of self-efficacy had a possible score of 40, and the number of agricultural education

courses taken ranged from 1 to 5.

First, academic self-efficacy was described in association with the number of agricultural courses taken by students. Participants (N=151) who had taken at least one agricultural education course had a mean score of 28.2 and a standard deviation of 6.2 in the academic self-efficacy domain. Next, participants (N=105) who had taken at least two agricultural education courses had a mean score of 28.8 and a standard deviation of 5.57 in the academic self-efficacy domain. Participants (N=62) who had taken at least three agricultural education courses had a mean score of 29.16 and a standard deviation of 5.18 in the academic self-efficacy domain. Finally participants (N=35) who taken at least four agricultural education courses had a mean score of 26.82 with a standard deviation of 5.66 and participants (N=15) who had taken at least five agricultural education courses had a mean score of 30 and a standard deviation of 5.43 in the academic self-efficacy domain.

Second, social self-efficacy was described in association with the number of agricultural education courses taken by participants. Participants (N=151) who had taken at least one agricultural education course had a mean score of 29.14 and a standard deviation of 5.25 in the social self-efficacy domain. Next, participants (N=105) who had taken at least two agricultural education courses had a mean score of 30.34 and a standard deviation of 5.07 in the social self-efficacy domain. Participants (N=62) who had taken at least three agricultural education courses had a mean score of 30.33 and a standard deviation of 4.85 in the social self-efficacy domain. Finally participants (N=35) who taken at least four agricultural education courses had a mean score of 29.88 with a standard deviation of 4.81 and participants (N=15) who had taken at least five agricultural education courses had a mean score of 30.8 and a standard deviation of 4.75 in the social self-efficacy domain.

Finally, emotional self-efficacy was described in association with the number of agricultural education courses taken by participants. Participants (N=151) who had taken at least one agricultural education course had a mean score of 27.76 and a standard deviation of 5.71 in the emotional self-efficacy domain. Next, participants (N=105) who had taken at least two agricultural education courses had a mean score of 28.36 and a standard deviation of 4.96 in the emotional self-efficacy domain. Participants (N=62) who had taken at least three agricultural education courses had a mean score of 28.51 and a standard deviation of 5.25 in the emotional self-efficacy domain. Finally participants (N=35) who taken at least four agricultural education courses had a mean score of 28.2 with a standard deviation of 5.95, and participants (N=15) who had taken at least five agricultural education courses had a mean score of 31.06 and a standard deviation of 5.24 in the emotional self-efficacy domain.

MANOVA analysis between the number of agricultural education courses taken (independent variable) and the three domains of self-efficacy (dependent variables) measured by the SEQ-C indicated that there was no statistically significant effect of the number of agricultural education courses taken and the domains of self-efficacy. The Pillai's Trace test produced an F-value of 1.2 with a significance of  $p=.278$ . The Wilks' Lambda produced an F-value of 1.195 with a significance of  $p=.282$ . Next, the Hotelling's Traces produced an F-value of 1.189 with a significance of  $p=.285$ . Finally, the Roy's Largest Root produced an F-value of 1.433 with a significance of  $p=.222$ . Each of the four test resulted in an insignificant F-value which supports the decision to fail to reject the null hypothesis. In other words, there is not a statistically significant relationship between the number of agricultural education courses and each domain of self-efficacy.

As part of the multivariate analysis, univariate tests (ANOVA) were performed to

analyze each domain of self-efficacy with the number of agricultural education classes taken by participants. The results of the univariate between subjects test indicated that the number of agricultural education courses taken didn't have a statistically significant effect on any of the domains of self-efficacy (academic, social, and emotional). An F-value of 1.353 with a significance of  $p=.250$  was determined in the ANOVA for academic self-efficacy and the number of agricultural education courses taken. Next, an ANOVA performed between social self-efficacy and the number of agricultural education courses taken produced an F-value of 1.246 with a significance of  $p=.291$ . The final ANOVA between emotional self-efficacy and the number of agricultural education courses taken produced an F-value of 1.360 with a significance of  $p=.247$ . Each ANOVA performed produced an F-value with a significance value greater than the established priori of .05, which indicated that the number of agricultural courses didn't have a statistically significant impact on the academic, social, and emotional domains of self-efficacy. These results supported the decision of fail to reject the null hypothesis.

The data analysis supported the decision to fail to reject the null hypothesis. The data indicated that the number of agricultural education courses taken did not have a statistically significant effect on academic, social, and emotional self-efficacy. These results do not align with the findings of Chiasson & Burnett (2001) and Ricketts et al. (2006) which found that the number of agricultural education courses taken were associated with higher achievement on high stakes test. These findings were related to data that indicated academic achievement is highly correlated with self-efficacy (Linnebrink & Pintrich, 2002). Also, a study by Walker (2003) indicated that an individual's self-efficacy can be enhanced by providing opportunities for self-evaluations, vicarious learning, and a variety of assessment contexts, all of which can be linked to agricultural education classes (Parr & Edwards, 2004). Also, Akers et al. (2004) conducted a

study that emphasized the importance of agricultural education courses in the development of emotional and social self-efficacy. Akers et al. (2004) determined that the agricultural education curriculum included opportunities for students to develop skills that have been associated with social and emotional self-efficacy. The skills taught in agricultural education courses that have been associated with social and emotional self-efficacy are as follows: communication skills, citizenship, confidence, life skills, self-control, self-motivation, and workplace skills (Akers et al., 2004; Erozkhan, 2013; Erozkhan and Deniz, 2012). A variety of research has supported the relationship between agricultural education classroom and laboratory instruction, but data from this study indicated that the number of agricultural education courses taken didn't have an effect on academic, social, and emotional self-efficacy.

#### **Research Question Four**

What was the relationship between student involvement in FFA and a student's academic, social, and emotional self-efficacy? The null hypothesis was there was not a statistically significant relationship between FFA participation and academic, social and emotional self-efficacy in this study. FFA participation was coded to become a dichotomous variable since the data collected on the questionnaire wasn't continuous. Students were determined to either participate in FFA activities or as non-participants. To determine the relationship between the variables, MANOVA was utilized in SPSS. The p-value for testing significance was set at  $p = .05$ .

Data analysis produced the descriptive statistics mean and standard deviation to describe SEQ-C scores for each domain of self-efficacy based on FFA participation. Each domain of self-efficacy had a possible score of 40, and participants were classified a participating in FFA or not participating in FFA.

Students (N=239) that participated in FFA activities had a mean score of 28.8 with a standard deviation of 5.82 in the academic self-efficacy. Non-participants (N=129) had a mean score of 27.95 with a standard deviation of 5.73. These descriptive statistics indicated that FFA participants averaged higher scores in the academic domain of self-efficacy than non-participants.

Next, students (N=239) that participated in FFA activities had a mean score of 30.02 with a standard deviation of 5.23 in the social self-efficacy domain. Non-participants (N=129) had a mean score of 29.46 with a standard deviation of 4.79 in the social self-efficacy domain. These descriptive statistics indicated that FFA participants averaged a higher score in the domain of social self-efficacy in comparison to non-FFA participants.

Finally, students (N=239) that participated in FFA activities had a mean score of 28.34 with a standard deviation of 5.52 in the emotional self-efficacy domain. Students (N=129) who were classified as non-FFA participants had a mean score of 28.03 with a standard deviation of 5.3 in the emotional self-efficacy domain. Results from the descriptive statistics indicate that FFA participants averaged higher scores in the emotional self-efficacy domain.

MANOVA analysis utilizing the standard four multivariate tests indicated that FFA participation did not have a significant effect on academic, social, and emotional self-efficacy. The Pillai's Trace, Wilks' Lambda, Hotelling's Trace, and Roy's Largest Root tests all produced an F-value of .699 with a significance of .553. The F-test results corresponding significance values were significantly greater than the set priori alpha value of .05. The greater significance value indicated that there wasn't a statistically significant relationship between FFA participation and the group of dependent variables (academic, social, and emotional self-efficacy). These results supported the decision to fail to reject the null hypothesis.

Following MANOVA, individual ANOVA's were conducted between FFA participation and each of the domains of self-efficacy. The first ANOVA between FFA participation and academic self-efficacy produced an F-value of 1.8 with a significance of  $p=.180$ . The large p-value indicated that FFA participation didn't have a statistically significant effect on academic self-efficacy. The second ANOVA between FFA participation and social self-efficacy produced an F-value of 1.00 with a significance value of  $p=.318$ . The large p-value indicated that FFA participation didn't have a statistically significant effect on social self-efficacy. Finally, the third ANOVA between FFA participation and emotional self-efficacy produced an F-value of .261 with a significance value of  $p=.610$ . The F-tests large p-value indicated that FFA participation didn't have a statistically significant effect on emotional self-efficacy, which supported the decision to fail to reject the null hypothesis.

MANOVA analysis was performed to assess the impact of SAE participation on the domains of self-efficacy measured by the SEQ-C (academic, social, and emotional). Results from the MANOVA tests indicated that level of SAE participation did not have a statistically significant effect on academic, social, and emotional self-efficacy as a group. All four multivariate tests used in MANOVA (Pillai's Trace, Wilks' Lambda, Hotelling's Trace, Roy's Largest Root) produced F-values of 1.606 with significance values of  $p=.188$  which supported the decision to fail to reject the null hypothesis.

The relationship between FFA participation and all three domains of self-efficacy measured by the SEQ-C were determined to be insignificant. Data analysis supported the decision to fail to reject the null hypothesis and that FFA participation didn't have a statistically significant effect academic, social, and emotional self-efficacy. Data collected from this study did not support previous research that supported the relationship between FFA participation and

academic, social and emotional self-efficacy (Carter & Neason, 1984; Croom & Flowers, 2001; Ramsey & Edwards, 2004; Scanlon & Burket, 1986; Townsend & Carter, 1983). The prior research indicated that participating in FFA activities supported the development of skills that are associated with higher levels of academic, social and emotional self-efficacy. The FFA Mission (2013) has indicated that it strives to make a difference in the lives of students by developing their potential for premier leadership, personal growth, and career success which aligns with the development of a student's academic, social, and emotional self-efficacy. FFA participation provides students with the opportunity to learn knowledge outside of the classroom, informal learning, which has been associated with the development of academic self-efficacy (Ramsey & Edwards, 2004). Also, participation in FFA has been linked to a student's development of leadership skills, self-confidence, citizenship, cooperation, and scholarship (Carter & Neason, 1984; Townsend & Carter, 1983). Also, Scanlon and Burket (1986) determined that a moderate participation level in FFA was positively correlated with the development of interpersonal skill, which have been associated with the development of social and emotional self-efficacy (Erozkan & Deniz, 2012). Previous research has supported the effect participation in FFA has on academic, social, and emotional self-efficacy, but data from this study has indicated that participation in FFA has no statistically significant effect on the domains of self-efficacy.

### **Research Question Five**

What was the relationship between student involvement with SAE and a student's academic, social, and emotional self-efficacy? The null hypothesis indicated that there wouldn't be a statistically significant relationship between SAE participation and academic, social and emotional self-efficacy in this study. SAE participation was used as a dichotomous variable

since data collected from the questionnaire wasn't continuous. Participation level was set at students who spent 10 hours or less on their SAE per semester and students who spent more than 10 hours per semester on their SAE. Spending less than 10 hours per semester on SAE was determined to be low participation. MANOVA was used to assess the relationship between SAE involvement and the three domains of self-efficacy. The p-value for assessing statistical significance was set at  $p=.05$ .

Data analysis produced the descriptive statistics mean and standard deviation to describe SEQ-C scores for each domain of self-efficacy based on SAE involvement. Each domain of self-efficacy had a possible score of 40, and participants were grouped based on whether they spent 10 hours or less on their SAE per semester or more than 10 hours on their SAE per semester.

First, students (N=193) that spent more than 10 hours on their SAE per semester had a mean score of 28.77 with a standard deviation of 6.02 in the academic self-efficacy domain. Students (N=175) who spent less than 10 hours per semester on their SAE had a mean score of 28.21 with a standard deviation of 5.56 in the academic self-efficacy domain. These results indicate that students who spent more time on their SAE each semester had higher levels of academic self-efficacy.

Second, students (N=193) that spent more than 10 hours per semester on their SAE had a mean score of 30.37 with a standard deviation of 4.68 in the social self-efficacy domain. On the other hand, students (N=175) who spent less than 10 hours on their SAE per semester had a mean score of 29.22 with a standard deviation of 5.45 in the social self-efficacy domain. These descriptive results indicated that students who spent more time on their SAE per semester had higher levels of social self-efficacy.

Finally, students (N=193) that spent more than 10 hours per semester on their SAE had a

mean score of 28.56 with a standard deviation of 5.15 in the emotional self-efficacy domain. In contrast, students (N=175) who spent less than 10 hours per semester on their SAE had a mean score of 27.87 with a standard deviation of 5.74 in the emotional self-efficacy domain. These results indicated that students who spent more time on their SAE per semester had higher levels of emotional self-efficacy.

ANOVA's were performed to analyze the impact of SAE involvement with academic, social, and emotional self-efficacy independently. First, an ANOVA between SAE participation level and academic self-efficacy produced an F-value of .856 with a significance of  $p=.355$ , which indicated that SAE participation level did not have a statistical significant effect on a student's academic self-efficacy. Next, an ANOVA between SAE participation level and emotional self-efficacy produced an F-value of 1.477 with a significance value of  $p=.255$ , which indicated that the level of student participation with an SAE did not have a statistical significant effect on their emotional self-efficacy. Finally, an ANOVA between SAE participation level and social self-efficacy produced an F-value of 4.740 with a significance value of  $p=.030$ , which indicated that SAE participation had a statistically significant impact on a student's social self-efficacy. The results of the ANOVA between level of SAE participation and social self-efficacy indicated as the level of SAE participation increased it increased the student's level of social self-efficacy. One drawback to the results was a significant Levene's test of equality of error variances which produced an a significant F-value [F (1,366) =4.093 with a  $p<.05$ ], which indicated that we reject the null hypothesis and homogeneity of variance cannot be assumed. Since the groups in the sample are considered equal (N=193 and N=175), larger group not more than 1 ½ times larger than the smaller group, then this was not considered a major issue and results from the ANOVA were accepted (Understanding the one-way ANOVA, nd., p. 6).

Data analysis indicated that SAE participation was not significantly related to academic and emotional self-efficacy. Analysis did indicate that there was a statistically significant relationship between SAE participation and social self-efficacy. The relationship between SAE participation and social self-efficacy was considered a weak positive correlation. The positive correlation indicated that as SAE participation increased, social self-efficacy increased. Overall, the data supports the decision to fail to reject the null hypothesis. The results from this study are not supported by previous research conducted by Cheek et al. (1994), Ramsey and Edwards (2004), Retallick (2010), and Robinson and Haynes (2011) which indicated that SAE involvement supported the development of an individual's academic, social, and emotional self-efficacy. Studies have determined that SAE involvement was a form of informal learning that was associated with enhanced academic achievement (Cheek et al., 1994; Ramsey & Edwards, 2004). Also, studies have determined that SAE participation provided students with opportunities to learn life skills, build relationships with community members and industry representatives, develop skills for college, and to develop responsibility (Robinson & Haynes, 2011). Each of these opportunities and their associated outcomes are linked with the development of academic, social, and emotional self-efficacy (Erozkan, 2013; Erozkan & Deniz, 2012; Pool & Qualter, 2013). Pool and Qualter (2013) indicated that individuals who have a high sense of emotional self-efficacy tend to develop and maintain personal networks and gain the respect of others more frequently, which in turn increases an individual's social self-efficacy. Previous has pointed to SAE participation having an effect on academic, social, and emotional self-efficacy, but data from the researcher's study indicated that SAE participation didn't have a statistically significant effect on each of the domains of self-efficacy.

### **Implications**

The implications of this study were that the three components of agricultural education didn't explain a significant amount of total self-efficacy variance, and that the combination of all three components didn't provide a means of predicting a student's total self-efficacy. Also, the study determined that each component of agricultural education didn't have a significant effect on academic, social, and emotional self-efficacy as a group. The only domain of self-efficacy to be influenced, by a component of agricultural education, was social self-efficacy being impacted by SAE participation. A possibility for such a low explanation of variance in total self-efficacy and lack of relationships between each independent variable and the domains of self-efficacy may stem from participants not filling out the SEQ-C and general questionnaire truthfully. When dealing with self-reported data, like in this study, several issues may arise that may skew the results. According to Paulhus and Vazire (as cited in McDonald, 2008), "Acquiescent responding, in which individuals agree with responses without considering what the question is asking, and extreme responding, or giving extreme ratings on scales, are common response tendencies" (pg. 4). A percentage of the participants may have completed the instruments as described by Paulhus and Vazire, which may have impacted the results. Also, participants may have completed the survey by selecting responses that would show them, in what they perceived, as a more favorable light. Paulhus (as cited in McDonald, 2008), called this desirable responding, in which an individual selects answers based on what would make them look better as an individual. This may have happened even though collected data from participants were kept completely anonymous.

Data collected from the general questionnaire eliciting information about the participants number of agricultural education courses completed, FFA participation, and SAE involvement could have been designed differently. Results may have been more accurate if continuous data

had been collected on the number of FFA activities participated in and the amount of time spent on SAE per semester. The questionnaire design only allowed students to select a number of hours or activities up to a certain level (ex. 4 or more activities). Since data collected on FFA participation and SAE involvement wasn't considered continuous, the variables were dichotomized, which alters individual differences.

Scores on the SEQ-C were relatively high across all participants. There have not been any studies conducted that have established what is considered a high or low score on the SEQ-C. In this study, scores ranged from a low of 39 to a high of 120, with 120 being the highest possible score. The mean score on the instrument was 86 and the mode was 86 as well. The lack of variation in scores from individuals with higher participation levels in agricultural education compared to individuals with lower participation levels in agricultural education established the assumption that the results were impacted by the small population of this study, and the participants coming from small school systems. The individuals who participated in the study were from small schools in the North District of Alabama. Many students who have taken agricultural education courses, participated in FFA, and had an SAE also have participated on athletic teams. Participation on athletic teams has been associated with a student having a higher overall perception of their abilities. This could have been a reason that first year students who participated in the study had a comparable total self-efficacy score to students who have taken multiple agricultural education courses, participated in multiple FFA activities, and spent more time with their SAE.

The results from this study may be an indication that the three component model of agricultural education does not have a significant impact on a student's total self-efficacy, and that the initial thought that a significant relationship would be found was due to looking through

rose colored glasses. Many times as researchers in a field of study, beliefs may be influenced by from saying something over and over until it becomes true (Anonymous, 1999). The following is an example of a Rose Colored Glasses Syndrome:

An example of the cause-effect error can be seen in research conducted by Dr. Herron of the University of Georgia. He studied national FFA proficiency award winners in the early 1980's. Dr. Herron's research found that a large majority of the national winners already had the farming or experience program well established before they first enrolled in agricultural education. While the FFA would like to claim the credit for these students' success, the fact is the students were a long way down the road to success before becoming FFA members (Anonymous, 1999, p.27).

It may be a false assumption in this study, but it is a possibility that agricultural education students may have developed their self-efficacy before entering the programs.

### **Recommendations**

Results from the study didn't support the relationship between the three component model of agricultural education and self-efficacy. Teachers and anyone who reads this data should consider the need for further research. Even though the relationship between the model of agricultural education and self-efficacy was proven to be insignificant, there was evidence in the review of literature that agricultural education and self-efficacy are important to an individual's success in a variety of situations. Also, classroom and laboratory instruction, FFA, and SAE are still the components of agricultural education, and there has been a wealth of research that has indicated it provides students with a variety of learning opportunities.

The significant relationship between SAE participation and social self-efficacy does provide incentive to encourage teachers to make sure SAE is an integral part of their programs.

Previous research has linked SAE participation to social self-efficacy development through students learning to develop relationships with business and industry representatives (Retallick, 2010). This should be considered important to teachers since this is providing their students opportunities to network and establish contacts that may prove beneficial to their future careers. In other words, it is not only considered important for social self-efficacy development, but for future success as well.

Future research should be conducted to examine the relationship between the three component model of agricultural education and self-efficacy. Modifications to this study could possibly provide more accurate details about the relationship. To improve the study, each independent variable should be measured using continuous variables instead of dichotomizing any of them. Also, a larger population for the study would possibly improve the study, as far as generalizing the results. Next, future research should focus on the effect SAE participation had social self-efficacy. This research has established a link between SAE and social self-efficacy, so more research is needed to further validate the relationship.

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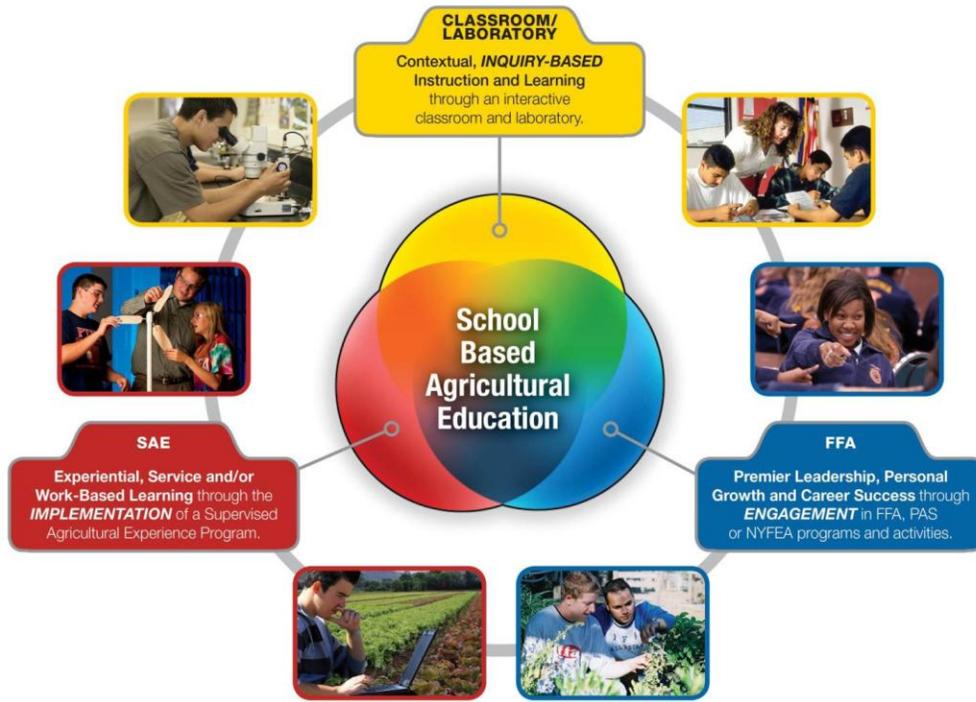
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## **Appendix A**

### **Agricultural Educations Three Component Model**



(Kentucky FFA Association, 2013)

**Appendix B**  
**IRB Protocol Approval**

# AUBURN UNIVERSITY INSTITUTIONAL REVIEW BOARD For RESEARCH INVOLVING HUMAN SUBJECTS RESEARCH PROTOCOL REVIEW FORM

For Information or help contact **THE OFFICE OF RESEARCH COMPLIANCE**, 115 Ramsay Hall, Auburn University  
 Phone: 334-844-5966 e-mail: [hsubject@auburn.edu](mailto:hsubject@auburn.edu) Web Address: <http://www.auburn.edu/research/vpr/ohs/>

Revised 03.26.11 – DO NOT STAPLE, CLIP TOGETHER ONLY.

Save a Copy

**1. PROPOSED START DATE of STUDY:**

PROPOSED REVIEW CATEGORY (Check one):      **FULL BOARD**                      **EXPEDITED**                       **EXEMPT**

**2. PROJECT TITLE:** The Relationship between Self-Efficacy and Agricultural Educations Three Component Model

**3. Kenneth Adam Aldridge**                      Ph. D Candidate                      Education                      205-412-8970                      KAA0010@auburn.edu  
**PRINCIPAL INVESTIGATOR**                      **TITLE**                      **DEPT**                      **PHONE**                      **AU E-MAIL**

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**MAILING ADDRESS**                      **FAX**                      **ALTERNATE E-MAIL**

**4. SOURCE OF FUNDING SUPPORT:**  Not Applicable     Internal     External Agency: \_\_\_\_\_  Pending  Received

**5. LIST ANY CONTRACTORS, SUB-CONTRACTORS, OTHER ENTITIES OR IRBs ASSOCIATED WITH THIS PROJECT:**

**6. GENERAL RESEARCH PROJECT CHARACTERISTICS**

6A. Mandatory CITI Training	6B. Research Methodology								
<p>Names of key personnel who have completed CITI: Kenneth Adam Aldridge</p> <hr/> <hr/> <p style="text-align: center;">CITI group completed for this study:  <input checked="" type="checkbox"/> Social/Behavioral    <input type="checkbox"/> Biomedical</p> <p style="text-align: center; font-weight: bold; font-size: 1.2em;">PLEASE ATTACH TO HARD COPY <u>ALL</u> CITI CERTIFICATES FOR <u>EACH</u> KEY PERSONNEL</p>	<p>Please check all descriptors that best apply to the research methodology.</p> <p>Data Source(s):    <input checked="" type="checkbox"/> New Data                      Existing Data</p> <p>Will recorded data directly or indirectly identify participants?             Yes                      <input checked="" type="checkbox"/> No</p> <p>Data collection will involve the use of:</p> <p><input checked="" type="checkbox"/> Educational Tests (cognitive diagnostic, aptitude, etc.)  <input type="checkbox"/> Interview / Observation  <input type="checkbox"/> Physical / Physiological Measures or Specimens (see Section 6D)  <input checked="" type="checkbox"/> Surveys / Questionnaires  <input checked="" type="checkbox"/> Internet / Electronic  <input type="checkbox"/> Audio / Video / Photos  <input type="checkbox"/> Private records or files</p>								
6C. Participant Information	6D. Risks to Participants								
<p>Please check all descriptors that apply to the participant population.</p> <p><input checked="" type="checkbox"/> Males    <input checked="" type="checkbox"/> Females    <input type="checkbox"/> AU students</p> <p><b>Vulnerable Populations</b></p> <p><input type="checkbox"/> Pregnant Women/Fetuses    <input type="checkbox"/> Prisoners</p> <p><input checked="" type="checkbox"/> Children and/or Adolescents (under age 19 in AL)</p> <p><b>Persons with:</b></p> <p><input type="checkbox"/> Economic Disadvantages    <input type="checkbox"/> Physical Disabilities  <input type="checkbox"/> Educational Disadvantages    <input type="checkbox"/> Intellectual Disabilities</p> <p>Do you plan to compensate your participants?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	<p>Please identify all risks that participants might encounter in this research.</p> <table style="width: 100%; border: none;"> <tr> <td style="border: none;"><input type="checkbox"/> Breach of Confidentiality*</td> <td style="border: none;"><input type="checkbox"/> Coercion</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Deception</td> <td style="border: none;"><input type="checkbox"/> Physical</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Psychological</td> <td style="border: none;"><input type="checkbox"/> Social</td> </tr> <tr> <td style="border: none;"><input checked="" type="checkbox"/> None</td> <td style="border: none;"><input type="checkbox"/> Other:</td> </tr> </table> <p style="font-size: 0.8em; margin-top: 10px;">*Note that if the investigator is using or accessing confidential or identifiable data, breach of confidentiality is always a risk.</p>	<input type="checkbox"/> Breach of Confidentiality*	<input type="checkbox"/> Coercion	<input type="checkbox"/> Deception	<input type="checkbox"/> Physical	<input type="checkbox"/> Psychological	<input type="checkbox"/> Social	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
<input type="checkbox"/> Breach of Confidentiality*	<input type="checkbox"/> Coercion								
<input type="checkbox"/> Deception	<input type="checkbox"/> Physical								
<input type="checkbox"/> Psychological	<input type="checkbox"/> Social								
<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:								
<p>Do you need IBC Approval for this study? <input checked="" type="checkbox"/> No    Yes - BUA # _____    Expiration date _____</p>									

The Auburn University Institutional Review Board has approved this document for use from 10/25/13 to 10/24/14 Protocol # 13-329 EP 1310

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DATE RECEIVED IN OHSR: <u>9-17-13</u> by <u>BK</u>	PROTOCOL # <u>13-329 EP 1310</u>
DATE OF IRB REVIEW: <u>10/25/13</u> by <u>CC</u>	APPROVAL CATEGORY: <u>4-SCFR 46.110(7)</u>
DATE OF IRB APPROVAL: _____ by _____	INTERVAL FOR CONTINUING REVIEW: <u>1 year</u>
COMMENTS:	

**Appendix C**  
**Information Letter**

**INFORMATION LETTER for research study entitled**

**“The Relationship between Self-Efficacy and Agriculture Educations Three Component Model”**

**You are invited to participate in a research study to:** 1) Determine if the three components of agricultural education (Classroom and Laboratory Instruction, FFA, and SAE) influence a student’s self-efficacy? 2) Determine what is the unique relationship of classroom instruction, FFA, and SAE to a student’s general self-efficacy? 3) Determine what is the correlation between classroom instruction and a student’s academic, social and emotional self-efficacy? 4) What is the correlation between student involvement with an SAE and a student’s academic, social and emotional self-efficacy? 5) What is the correlation between student involvement in FFA and a student’s academic, social and emotional self-efficacy? You have been selected as a possible participant because you are an agriscience student in the state of Alabama, and are in the age range of 14-18.

**What will be involved if you participate?** If you decide to participate in this research study, you will be asked to complete one questionnaire about your involvement in agriscience education. Also, you will be asked to complete the Self-Efficacy Questionnaire for Children, which will ask you a series of questions relating to how well you would be able to handle certain tasks. Your total time commitment will be approximately twenty-five minutes.

**Are there any risks or discomforts?** No, there are no risks associated with participating in this study and your participation is strictly voluntary.

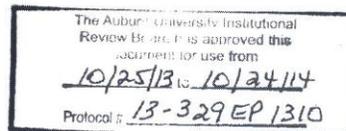
**Are there any benefits to yourself or others?** The benefits to your participation in this study will hopefully help determine of the three components of agriculture education (classroom and laboratory instruction, FFA, and SAE) impact a student’s self-efficacy. Hopefully this study will identify a method of determining a student’s self-efficacy level by their participation levels in all three components of agriscience education.

**Will you receive compensation for participation?** No, we will not be able to offer compensation to you for your participation.

**Are there any costs?** If you decide to participate, you will not be liable for any costs resulting from this research project.

**If you change your mind about participating,** you can be withdrawn from this study at any time. Your participation is completely voluntary. If you choose to withdraw, your data can be withdrawn as long as it is identifiable. Your decision about whether or not to participate will not jeopardize you future relations with Auburn University, the

Please add this approval information in sentence form to this letter. Send the updated letter, with a live link, to the IRB.



department of Curriculum and Teaching, the state FFA association, Mr. Kenneth Aldridge, or Dr. Brian Parr.

**Any data obtained in connection with this study will remain anonymous.** We will protect your privacy and the data you provide by coding any and all data that we collect from you. Additionally, this data will be securely stored on the Qualtrics data base in Provo, UT for a period of four months, until the research study has been completed.

*Parental Consent forms for this study will only be collected if parents/guardians do not want their child to participate in the study. If parents/guardians are willing to let their child participate in the study, the information letter and consent form do not have to be returned to me.*

**If you have any questions about this study, please ask them now** or contact Mr. Kenneth Aldridge at (205) 412-8970 or Dr. Brian Parr at (334) 844-6995.

**If you have questions about your rights as a research participant,** you contact the Auburn University Office of Human Subjects Research or the Institutional Review Board by phone (334) 844-5966 or email at [hsubject@auburn.edu](mailto:hsubject@auburn.edu) or [IRBChair@auburn.edu](mailto:IRBChair@auburn.edu).

Kenneth A. Aldridge  
Kenneth A. Aldridge

10/23/13  
Date

Kenneth A. Aldridge  
Printed Name

Brian Parr  
Dr. Brian Parr, Faculty Advisor

10-23-13  
Date

Brian Parr  
Printed Name

10-23-13  
Date

The Auburn University Institutional Review Board has approved this journal for use from <u>10/25/13</u> to <u>10/24/14</u> Protocol # <u>13-329EP1310</u>
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**Appendix D**  
**Minor Assent Form**

**MINOR ASSENT for a Research Study entitled**

**“The Relationship between Self-Efficacy and Agriculture Educations Three Component Model”**

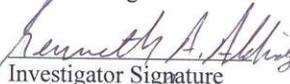
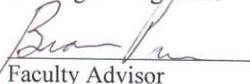
You are invited to participate in a research study to determine what the relationship is between self-efficacy and agriculture education’s three components (classroom and laboratory instruction, FFA, and SAE)? Also, the research study is seeking to determine what is the predictive ability of a student’s participation level in all three components of agriculture education to determine their respective self-efficacy?

If you (the student) decide you want to be in this study, you will complete two short questionnaires given by your Agriscience teacher/FFA advisor. Both questionnaires should take less than 25 minutes to complete. The first questionnaire will ask you questions relating to your participation level in each of the three components of agriculture education (classroom and laboratory instruction, FFA, and SAE) along with your gender. The second questionnaire will ask you a series of questions relating to how well you would be able to handle certain tasks.

The investigator believes that students, such as you, are a key element in understanding the relationship between agriculture education’s three components and students’ self-efficacy.

If you have decided to help us, please sign this form and return it to the address listed below:

Mr. Kenneth A. Aldridge  
980 County Hwy. 72  
Winfield, AL 35594

Student’s Signature	Printed Name	Date
	Kenneth A. Aldridge	10-23-13
Investigator Signature	Printed Name	Date
	Brian Parr	10-23-13
Faculty Advisor	Printed Name	Date

**Appendix E**  
**Parental Consent Form**

**INFORMATION LETTER for research study entitled**

**“The Relationship between Self-Efficacy and Agriculture Educations Three Component Model”**

**You are invited to participate in a research study to:** 1) Determine if the three components of agricultural education (Classroom and Laboratory Instruction, FFA, and SAE) influence a student’s self-efficacy? 2) Determine what is the unique relationship of classroom instruction, FFA, and SAE to a student’s general self-efficacy? 3) Determine what is the correlation between classroom instruction and a student’s academic, social and emotional self-efficacy? 4) What is the correlation between student involvement with an SAE and a student’s academic, social and emotional self-efficacy? 5) What is the correlation between student involvement in FFA and a student’s academic, social and emotional self-efficacy? You have been selected as a possible participant because you are an agriscience student in the state of Alabama, and are in the age range of 14-18.

**What will be involved if you participate?** If you decide to participate in this research study, you will be asked to complete one questionnaire about your involvement in agriscience education. Also, you will be asked to complete the Self-Efficacy Questionnaire for Children, which will ask you a series of questions relating to how well you would be able to handle certain tasks. Your total time commitment will be approximately twenty-five minutes.

**Are there any risks or discomforts?** No, there are no risks associated with participating in this study and your participation is strictly voluntary.

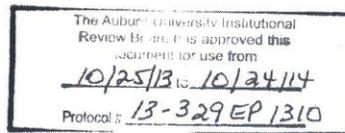
**Are there any benefits to yourself or others?** The benefits to your participation in this study will hopefully help determine of the three components of agriculture education (classroom and laboratory instruction, FFA, and SAE) impact a student’s self-efficacy. Hopefully this study will identify a method of determining a student’s self-efficacy level by their participation levels in all three components of agriscience education.

**Will you receive compensation for participation?** No, we will not be able to offer compensation to you for your participation.

**Are there any costs?** If you decide to participate, you will not be liable for any costs resulting from this research project.

**If you change your mind about participating,** you can be withdrawn from this study at any time. Your participation is completely voluntary. If you choose to withdraw, your data can be withdrawn as long as it is identifiable. Your decision about whether or not to participate will not jeopardize you future relations with Auburn University, the

Please add this approval information in sentence form to this letter. Send the updated letter, with a live link, to the IRB.



department of Curriculum and Teaching, the state FFA association, Mr. Kenneth Aldridge, or Dr. Brian Parr.

**Any data obtained in connection with this study will remain anonymous.** We will protect your privacy and the data you provide by coding any and all data that we collect from you. Additionally, this data will be securely stored on the Qualtrics data base in Provo, UT for a period of four months, until the research study has been completed.

*Parental Consent forms for this study will only be collected if parents/guardians do not want their child to participate in the study. If parents/guardians are willing to let their child participate in the study, the information letter and consent form do not have to be returned to me.*

**If you have any questions about this study, please ask them now** or contact Mr. Kenneth Aldridge at (205) 412-8970 or Dr. Brian Parr at (334) 844-6995.

**If you have questions about your rights as a research participant,** you contact the Auburn University Office of Human Subjects Research or the Institutional Review Board by phone (334) 844-5966 or email at [hsubject@auburn.edu](mailto:hsubject@auburn.edu) or [IRBChair@auburn.edu](mailto:IRBChair@auburn.edu).

Kenneth A. Aldridge  
Kenneth A. Aldridge

10/23/13  
Date

Kenneth A. Aldridge  
Printed Name

Brian Parr  
Dr. Brian Parr, Faculty Advisor

10-23-13  
Date

Brian Parr  
Printed Name

10-23-13  
Date

The Auburn University Institutional Review Board has approved this journal for use from <u>10/25/13 to 10/24/14</u> Protocol # <u>13-329EP1310</u>
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PARENTAL INFORMATION LETTER for research study entitled

“The Relationship between Self-Efficacy and Agriculture Educations Three Component Model”

HAVING READ THE INFORMATION PROVIDED, YOU MUST DECIDE WHETHER OR NOT YOU WISH FOR YOUR CHILD TO PARTICIPATE IN THIS RESEARCH STUDY.

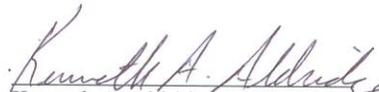
UNLESS THE RESEARCHER RECEIVES NOTIFICATION FROM YOU THAT YOU DO NOT WISH FOR YOUR CHILD TO PARTICIPATE, YOUR CHILD AND HIS/HER DATA WILL BE INCLUDED IN THIS STUDY.

IF YOU DO NOT WISH FOR YOUR CHILD TO PARTICIPATE, PLEASE CHECK THE APPROPRIATE LINE BELOW AND SIGN AN MAIL THIS SIGNATURE PAGE TO THE FOLLOWING ADDRESS:

MR. KENNETH A. ALDRIDGE  
980 COUNTY HWY. 72  
WINFIELD, AL 35594

       I DO NOT WISH FOR MY CHILD’S INFORMATION TO BE INCLUDED IN THIS STUDY.

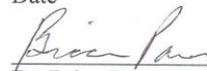
\_\_\_\_\_  
Parent/Guardian Signature

  
Kenneth A. Aldridge, Investigator

\_\_\_\_\_  
Date

10-23-13  
Date

\_\_\_\_\_  
Printed Name

  
Dr. Brian Parr, Faculty Advisor

\_\_\_\_\_  
Child’s Name

10-23-13  
Date

**Appendix F**  
**Alabama FFA District Map**





## **Appendix G**

### **Self-Efficacy Questionnaire for Children (SEQ-C)**

## Self-Efficacy Questionnaire for Children (SEQ-C)

	1	2	3	4	5
	Not at all				Very well
1. How well can you get teachers to help you when you get stuck on schoolwork?	___	___	___	___	___
2. How well can you express your opinions when other classmates disagree with you?	___	___	___	___	___
3. How well do you succeed in cheering yourself up when an unpleasant event has happened?	___	___	___	___	___
4. How well can you study when there are other interesting things to do?	___	___	___	___	___
5. How well do you succeed in becoming calm again when you are very scared?	___	___	___	___	___
6. How well can you become friends with other children?	___	___	___	___	___
7. How well can you study a chapter for a test?	___	___	___	___	___
8. How well can you have a chat with an unfamiliar person?	___	___	___	___	___
9. How well can you prevent to become nervous?	___	___	___	___	___
10. How well do you succeed in finishing all your homework every day?	___	___	___	___	___
11. How well can you work in harmony with your classmates?	___	___	___	___	___
12. How well can you control your feelings?	___	___	___	___	___
13. How well can you pay attention during every class?	___	___	___	___	___
14. How well can you tell other children that they are doing something that you don't like?	___	___	___	___	___
15. How well can you give yourself a pep-talk when you feel low?	___	___	___	___	___
16. How well do you succeed in understanding all subjects in school?	___	___	___	___	___

- |  |     |     |     |     |     |
|--|-----|-----|-----|-----|-----|
| 17. How well can you tell a funny event to a group of children?              | ___ | ___ | ___ | ___ | ___ |
| 18. How well can you tell a friend that you don't feel well?                 | ___ | ___ | ___ | ___ | ___ |
| 19. How well do you succeed in satisfying your parents with your schoolwork? | ___ | ___ | ___ | ___ | ___ |
| 20. How well do you succeed in staying friends with other children?          | ___ | ___ | ___ | ___ | ___ |
| 21. How well do you succeed in suppressing unpleasant thoughts?              | ___ | ___ | ___ | ___ | ___ |
| 22. How well do you succeed in passing a test?                               | ___ | ___ | ___ | ___ | ___ |
| 23. How well do you succeed in preventing quarrels with other children?      | ___ | ___ | ___ | ___ | ___ |
| 24. How well do you succeed in not worrying about things that might happen?  | ___ | ___ | ___ | ___ | ___ |

**Scoring**

A total self-efficacy score can be obtained by summing across all items.

Items 1, 4, 7, 10, 13, 16, 19, and 22 = Academic self-efficacy

Items 2, 6, 8, 11, 14, 17, 20, and 23 = Social self-efficacy

Items 3, 5, 9, 12, 15, 18, 21, and 24 = Emotional self-efficacy

**Key references**

Muris, P. (2001). A brief questionnaire for measuring self-efficacy in youths. *Journal of Psychopathology and Behavioral Assessment*, 23, 145-149.

Muris, P. (2002). Relationships between self-efficacy and symptoms of anxiety disorders and depression in a normal adolescent sample. *Personality and Individual Differences*, 32, 337-348

**Note**

Three items of this questionnaire were taken from Bandura et al. (1999). See: Bandura, A., Pastorelli, C., Barbaranelli, C., & Caprara, G.V. (1999). Self-efficacy pathways to childhood depression. *Journal of Personality and Social Psychology*, 76, 258-269.

## **Appendix H**

### **General Agricultural Education Student Questionnaire**

## Student Questionnaire

### Participation Level in the Three Components of Agricultural Education

#### (Classroom and Laboratory Instruction, FFA, and SAE)

Please circle the response that indicates your involvement in each of the three components of Agricultural Education:

1. **Student Gender:**      Male                  Female
2. **Number of Agricultural Education courses you have completed:**  
1      2      3      4      5
3. **Number of FFA activities you have participated in (ex. FFA meetings, CDE teams, attending FFA State Convention, officer position, etc):**  
1      2      3      4      5 or more
4. **Amount of time you spend on your SAE per Semester:**  
10 hours or less      11-20 hours      21-30 hours      31-40 hours      More than 40 hours

**Appendix I**  
**Teacher Email #1**

## Dissertation participant request

Adam Aldridge

Sent: Friday, November 15, 2013 7:57 AM

**Attachments:** Minor Assent.pdf (507 KB) ; Parental Consent0001.pdf (2 MB) ; Site Letter Template.doc (31 KB)

Hello, my name is Adam Aldridge, and I am in the final stages of completing the requirements for a PhD in Career and Technical Education from Auburn University. I am an Agriscience teacher at Winfield City High School, which is in North Alabama. I have met many of you at various times, whether at North District Eliminations, State Convention, Summer Conference, or at other venues. I am in need of your assistance. In order for me to complete my dissertation, I am seeking your assistance in collecting data for my research study. My dissertation will be focusing on the relationship between the three components of agriculture education and self-efficacy (how someone feels they can perform a specific task to obtain a particular outcome). In other words, I am trying to collect data from your agriculture students to determine the following:

1. Do the three components of agricultural education influence a student's self-efficacy?
2. What is the unique relationship of classroom instruction, FFA, and SAE to a student's general self-efficacy?
3. What is the correlation between classroom instruction and a student's academic, social and emotional self-efficacy?
4. What is the correlation between student involvement with an SAE and a student's academic, social and emotional self-efficacy?
5. What is the correlation between student involvement in FFA and a student's academic, social and emotional self-efficacy?

I am hoping that the information gathered from this study will provide us with insight of how our programs impact a student's self-efficacy, and if any of the three components influence a student's self-efficacy more. This information could possibly provide us with an idea of why we retain students in our programs.

**Before your students are able to participate in the study, I am in need of approval from your school systems principal or superintendent verifying they are willing to let your students participate in the study. I have attached an information letter that explains the study, and should answer any questions your administration may have. Also, I am attaching a letter template that may be used by your principal or superintendent to authorize your student's participation. All that needs to be added to the letter is your schools official letterhead, school name in the text, and your principal's or superintendent's signature. If your administration is willing to let your student's participate, the letter can be scanned and emailed back to me.**

If your administration allows your students to participate please give each of your students (grades 9-12) a copy of the minor assent form and the parental information letter (consent form). **If students are willing to participate in the study, have them sign the assent form and return them to me. Also, if parents aren't willing for their child to participate have them sign and return the consent form to you. If a parental consent form is signed and returned**

**please mail it back to me with the assent forms (Let me know and I will provide and envelope and postage).** Also, read the general information to your students. If students are willing to participate in the study, I am asking you to allow them to complete the two questionnaires on the provided link below during your class (I have combined the questionnaires). The questionnaires should take less than 25 minutes to complete. The first questionnaire is asking for information related to the number Agriculture courses the students have taken, FFA participation, SAE, and gender. The second questionnaire asks for students to respond to a series of questions that want them to rate how well they can handle a specific task (relates to 3 areas of self-efficacy: academic, social, and emotional).

Self-Efficacy Questionnaire for Children (SEQ-C): [https://auburn.qualtrics.com/SE/?SID=SV\\_1Y9mBfZCCKE9YGh](https://auburn.qualtrics.com/SE/?SID=SV_1Y9mBfZCCKE9YGh)

Thank you for time, and I truly appreciate your help in my quest to complete my degree. If you have any questions, feel free to email or call me at the following:

Email: [aaldridge@winfield.k12.al.us](mailto:aaldridge@winfield.k12.al.us)

Phone: 205-412-8970

Adam Aldridge  
Adam Aldridge  
Agriscience Dept.

**Appendix J**  
**Teacher Email #2**

## **RE: Dissertation participant request**

Adam Aldridge

**Sent:** Monday, November 25, 2013 9:05 AM

I hope everyone is having a great start to the week. Also, I'm sure everyone is getting ready the Thanksgiving break. I am sending this email out as a reminder that I need your help. If possible, I need everyone who can to participate in this study. Your student's input on the survey will be a tremendous help to me. If you have any questions feel free to email or call me.

Phone: 205-412-8970

Adam Aldridge  
Agriscience Dept.  
Winfield City High School

## **Dissertation participant request**

Adam Aldridge

**Sent:** Friday, November 15, 2013 7:57 AM

**Attachments:** Minor Assent.pdf (507 KB) ; Parental Consent0001.pdf (2 MB) ; Site Letter Template.doc (31 KB)

Hello, my name is Adam Aldridge, and I am in the final stages of completing the requirements for a PhD in Career and Technical Education from Auburn University. I am an Agriscience teacher at Winfield City High School, which is in North Alabama. I have met many of you at various times, whether at North District Eliminations, State Convention, Summer Conference, or at other venues. I am in need of your assistance. In order for me to complete my dissertation, I am seeking your assistance in collecting data for my research study. My dissertation will be focusing on the relationship between the three components of agriculture education and self-efficacy (how someone feels they can perform a specific task to obtain a particular outcome). In other words, I am trying to collect data from your agriculture students to determine the following:

1. Do the three components of agricultural education influence a student's self-efficacy?
2. What is the unique relationship of classroom instruction, FFA, and SAE to a student's general self-efficacy?
3. What is the correlation between classroom instruction and a student's academic, social and emotional self-efficacy?
4. What is the correlation between student involvement with an SAE and a student's academic, social and emotional self-efficacy?
5. What is the correlation between student involvement in FFA and a student's academic, social and emotional self-efficacy?

I am hoping that the information gathered from this study will provide us with insight of how our programs impact a student's self-efficacy, and if any of the three components influence a student's self-efficacy more. This information could possibly provide us with an idea of why we retain students in our programs.

**Before your students are able to participate in the study, I am in need of approval from your school systems principal or superintendent verifying they are willing to let your students participate in the study. I have attached an information letter that explains the study, and should answer any questions your administration may have. Also, I am attaching a letter template that may be used by your principal or superintendent to authorize your student's participation. All that needs to be added to the letter is your schools official letterhead, school name in the text, and your principal's or superintendent's signature. If your administration is willing to let your student's participate, the letter can be scanned and emailed back to me.**

If your administration allows your students to participate please give each of your students (grades 9-12) a copy of the minor assent form and the parental information letter (consent form). **If students are willing to participate in the study, have them sign the assent form and return them to me. Also, if parents aren't willing for their child to participate have them sign and return the consent form to you. If a parental consent form is signed and returned please mail it back to me with the assent forms (Let me know and I will provide and envelope and postage).** Also, read the general information to your students. If students are willing to participate in the study, I am asking you to allow them to complete the two questionnaires on the provided link below during your class (I have combined the questionnaires). The questionnaires should take less than 25 minutes to complete. The first questionnaire is asking for information related to the number Agriculture courses the students have taken, FFA participation, SAE, and gender. The second questionnaire asks for students to respond to a series of questions that want them to rate how well they can handle a specific task (relates to 3 areas of self-efficacy: academic, social, and emotional).

Self-Efficacy Questionnaire for Children (SEQ-C): [https://auburn.qualtrics.com/SE/?SID=SV\\_1Y9mBfZCCKE9YGh](https://auburn.qualtrics.com/SE/?SID=SV_1Y9mBfZCCKE9YGh)

Thank you for time, and I truly appreciate your help in my quest to complete my degree. If you have any questions, feel free to email or call me at the following:

Email: [aaldridge@winfield.k12.al.us](mailto:aaldridge@winfield.k12.al.us)  
Phone: 205-412-8970

Adam Aldridge  
Adam Aldridge  
Agriscience Dept.

**Appendix K**  
**Teachers Email #3**

## Dissertation Help - Adam Aldridge (Email #3)

Adam Aldridge

**Sent:** Wednesday, December 04, 2013 10:05 AM

**Attachments:**Information\_consent form.pdf (2 MB) ; Minor\_Assent.pdf (507 KB) ; Site\_Letter\_Template.doc (31 KB)

I hope everyone had a great Thanksgiving! It is a busy time of the school year, especially with fruit deliveries and other fundraisers going on before the Christmas break. I am hoping that you would be able to take time out of your busy schedule and have your Ag students complete my survey. Your help would be greatly appreciated, and the data collected would be very valuable to my research. I am attaching the information letter, consent forms and assent forms to this email in case anyone didn't receive my first email. If you have any questions, contact me via email or phone (205-412-8970).

Self-Efficacy Questionnaire for Children (SEQ-C): [https://auburn.qualtrics.com/SE/?SID=SV\\_1Y9mBfZCCKE9YGh](https://auburn.qualtrics.com/SE/?SID=SV_1Y9mBfZCCKE9YGh)

thanks,

Adam Aldridge  
Agriscience Dept.  
Winfield City High School

Hello, my name is Adam Aldridge, and I am in the final stages of completing the requirements for a PhD in Career and Technical Education from Auburn University. I am an Agriscience teacher at Winfield City High School, which is in North Alabama. I have met many of you at various times, whether at North District Eliminations, State Convention, Summer Conference, or at other venues. I am in need of your assistance. In order for me to complete my dissertation, I am seeking your assistance in collecting data for my research study. My dissertation will be focusing on the relationship between the three components of agriculture education and self-efficacy (how someone feels they can perform a specific task to obtain a particular outcome). In other words, I am trying to collect data from your agriculture students to determine the following:

1. Do the three components of agricultural education influence a student's self-efficacy?
2. What is the unique relationship of classroom instruction, FFA, and SAE to a student's general self-efficacy?
3. What is the correlation between classroom instruction and a student's academic, social and emotional self-efficacy?
4. What is the correlation between student involvement with an SAE and a student's academic, social and emotional self-efficacy?
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I am hoping that the information gathered from this study will provide us with insight of how our programs impact a student's self-efficacy, and if any of the three components influence a student's self-efficacy more. This information could possibly provide us with an idea of why we retain students in our programs.

**Before your students are able to participate in the study, I am in need of approval from your school systems principal or superintendent verifying they are willing to let your students participate in the study. I have attached an information letter that explains the study, and should answer any questions your administration may have. Also, I am attaching a letter template that may be used by your principal or superintendent to authorize your student's participation. All that needs to be added to the letter is your schools official letterhead, school name in the text, and your principal's or superintendent's signature. If your administration is willing to let your student's participate, the letter can be scanned and emailed back to me.**

If your administration allows your students to participate please give each of your students (grades 9-12) a copy of the minor assent form and the parental information letter (consent form). **If students are willing to participate in the study, have them sign the assent form and return them to me. Also, if parents aren't willing for their child to participate have them sign and return the consent form to you. If a parental consent form is signed and returned please mail it back to me with the assent forms (Let me know and I will provide and envelope and postage).** Also, read the general information to your students. If students are willing to participate in the study, I am asking you to allow them to complete the two questionnaires on the provided link below during your class (I have combined the questionnaires). The questionnaires should take less than 25 minutes to complete. The first questionnaire is asking for information related to the number Agriculture courses the students have taken, FFA participation, SAE, and gender. The second questionnaire asks for students to respond to a series of questions that want them to rate how well they can handle a specific task (relates to 3 areas of self-efficacy: academic, social, and emotional).

Self-Efficacy Questionnaire for Children (SEQ-C): [https://auburn.qualtrics.com/SE/?SID=SV\\_1Y9mBfZCCKE9YGh](https://auburn.qualtrics.com/SE/?SID=SV_1Y9mBfZCCKE9YGh)

Thank you for time, and I truly appreciate your help in my quest to complete my degree. If you have any questions, feel free to email or call me at the following:

Email: [aaldridge@winfield.k12.al.us](mailto:aaldridge@winfield.k12.al.us)  
Phone: 205-412-8970

Adam Aldridge  
Adam Aldridge  
Agriscience Dept.

**Appendix L**  
**Site Authorization Letters**





RODNEY D. AARON  
PRINCIPAL

## Curry High School

155 YELLOW JACKET DRIVE  
JASPER, ALABAMA 35503  
(205) 384-3887  
FAX: (205) 221-7381

October 15, 2013



JEFF ATKINS  
ASSISTANT PRINCIPAL

Institutional Review Board  
c/o Office of Human Subjects Research  
307 Samford Hall  
Auburn University, AL 36849

Dear IRB Members,

After reviewing the proposed study, "The Relationship between Self-Efficacy and the Three Component Model of Agricultural Education", presented by Mr. Kenneth A. Aldridge, a graduate student at Auburn University, I have granted permission for the study to be conducted at Curry High School.

The purpose of the study is to determine the influence of the three component model of agricultural education on a student's self-efficacy. The primary activity will be students completing two surveys via Qualtrics. Only students in grades 9-12 and who are enrolled in an agriculture education course are eligible to participate.

I understand that students will complete *two questionnaires through Qualtrics while in their agriculture education class and that the questionnaires will only require 25 minutes for students to complete*. I expect that this project will end not later than 12/1/2013. Mr. Aldridge will *contact and recruit* our students and will *collect data* at Curry High School.

I understand that Mr. Aldridge will be using a consent form that only requires returning if parents/guardians elect to not let their child participate in the study, and have confirmed that he has the cooperation of the classroom teachers. Mr. Aldridge has agreed to provide to my office a copy of all Auburn University IRB-approved, stamped consent documents before he recruits participants on campus. Any data collected by Mr. Aldridge will be kept confidential and will be stored *in a locked filing cabinet in his office and will be securely stored on the Qualtrics data base in Provo, UT for a period of four months*. Mr. Aldridge has also agreed to provide to us a copy of the aggregate results from his study.

If the IRB has any concerns about the permission being granted by this letter, please contact me at the phone number listed below.

Sincerely,

Rodney Aaron  
Principal  
Curry High School  
(205) 384-3887



*Parrish High School*  
*35 Tornado Alley*  
*Parrish AL 35580*  
*205-686-7701*  
*205-686-9350 (Fax)*

October 15, 2013

Institutional Review Board  
c/o Office of Human Subjects Research  
307 Samford Hall  
Auburn University, AL 36849

Dear IRB Members,

After reviewing the proposed study, "The Relationship between Self-Efficacy and the Three Component Model of Agricultural Education", presented by Mr. Kenneth A. Aldridge, a graduate student at Auburn University, I have granted permission for the study to be conducted at Parrish High School.

The purpose of the study is to determine the influence of the three component model of agricultural education on a student's self-efficacy. The primary activity will be students completing two surveys via Qualtrics. Only students in grades 9-12 and who are enrolled in an agriculture education course are eligible to participate.

I understand that students will complete *two questionnaires through Qualtrics while in their agriculture education class and that the questionnaires will only require 25 minutes for students to complete*. I expect that this project will end not later than 12/1/2013. Mr. Aldridge will *contact and recruit* our students and will *collect data* at Parrish High School.

I understand that Mr. Aldridge will be using a consent form that only requires returning if parents/guardians elect to not let their child participate in the study, and have confirmed that he has the cooperation of the classroom teachers. Mr. Aldridge has agreed to provide to my office a copy of all Auburn University IRB-approved, stamped consent documents before he recruits participants on campus. Any data collected by Mr. Aldridge will be kept confidential and will be stored *in a locked filing cabinet in his office and will be securely stored on the Qualtrics data base in Provo, UT for a period of four months*. Mr. Aldridge has also agreed to provide to us a copy of the aggregate results from his study.

If the IRB has any concerns about the permission being granted by this letter, please contact me at the phone number listed below.

Sincerely,

Principal  
Parrish High School



## Winfield City High School

232 Pirates Cove  
Winfield, Alabama 35594

Office of Principal  
Benjie Parrish  
October 17, 2013

Phone (205) 487-6900  
Fax (205) 487-4257

Institutional Review Board  
c/o Office of Human Subjects Research  
307 Samford Hall  
Auburn University, AL 36849

Dear IRB Members,

After reviewing the proposed study, "The Relationship between Self-Efficacy and the Three Component Model of Agricultural Education", presented by Mr. Kenneth A. Aldridge, a graduate student at Auburn University, I have granted permission for the study to be conducted at Winfield City High School.

The purpose of the study is to determine the influence of the three component model of agricultural education on a student's self-efficacy. The primary activity will be students completing two surveys via Qualtrics. Only students in grades 9-12 and who are enrolled in an agriculture education course are eligible to participate.

I understand that students will complete *two questionnaires through Qualtrics while in their agriculture education class and that the questionnaires will only require 25 minutes for students to complete*. I expect that this project will end not later than 12/1/2013. Mr. Aldridge will *contact and recruit* our students and will *collect data* at Winfield City High School.

I understand that Mr. Aldridge will be using a consent form that only requires returning if parents/guardians elect to not let their child participate in the study, and have confirmed that he has the cooperation of the classroom teachers. Mr. Aldridge has agreed to provide to my office a copy of all Auburn University IRB-approved, stamped consent documents before he recruits participants on campus. Any data collected by Mr. Aldridge will be kept confidential and will be stored *in a locked filing cabinet in his office and will be securely stored on the Qualtrics data base in Provo, UT for a period of four months*. Mr. Aldridge has also agreed to provide to us a copy of the aggregate results from his study.

If the IRB has any concerns about the permission being granted by this letter, please contact me at the phone number listed below.

Sincerely,  
  
Principal  
Winfield City High School



OAKMAN HIGH SCHOOL

P.O. Box 286  
OAKMAN, AL 35579  
Telephone: (205) 622-3381  
Fax: (205) 622-3542



Patrick Gann  
Principal

Kristi Cain  
Assistant Principal

Dana Gray  
Counselor

12/9/13

Date

Institutional Review Board  
c/o Office of Human Subjects Research  
307 Samford Hall  
Auburn University, AL 36849

Dear IRB Members,

After reviewing the proposed study, "The Relationship between Self-Efficacy and the Three Component Model of Agricultural Education", presented by Mr. Kenneth A. Aldridge, a graduate student at Auburn University, I have granted permission for the study to be conducted at **Oakman High School**.

The purpose of the study is to determine the influence of the three component model of agricultural education on a student's self-efficacy. The primary activity will be students completing two surveys via Qualtrics. Only students in grades 9-12 and who are enrolled in an agriculture education course are eligible to participate.

I understand that students will complete *two questionnaires through Qualtrics while in their agriculture education class and that the questionnaires will only require 25 minutes for students to complete*. I expect that this project will end not later than 12/31/2013. Mr. Aldridge will *contact and recruit* our students and will *collect data at Oakman High School*.

I understand that Mr. Aldridge will be using a consent form that only requires returning if parents/guardians elect to not let their child participate in the study, and have confirmed that he has the cooperation of the classroom teachers. Mr. Aldridge has agreed to provide to my office a copy of all Auburn University IRB-approved, stamped consent documents before he recruits participants on campus. Any data collected by Mr. Aldridge will be kept confidential and will be stored in a *locked filing cabinet in his office and will be securely stored on the Qualtrics data base in Provo, UT for a period of four months*. Mr. Aldridge has also agreed to provide to us a copy of the aggregate results from his study.

If the IRB has any concerns about the permission being granted by this letter, please contact me at the phone number listed below.

Patrick Gann  
Principal

**Appendix M**  
**FFA Mission Precepts**

## Components of Premier Leadership, Personal Growth and Career Success

### **Premier Leadership**

*Definition: "Influence"*

- **Action**
  - Do you have the skills and competencies needed to achieve the desired results?
- **Relationships**
  - Can you build a constituency through listening, coaching, understanding and appreciating others?
- **Vision**
  - Have you set a clear image of what the future should be?
- **Character**
  - Do you possess a collection of virtues by which to live your life?
- **Awareness**
  - Do you have a quest for purposeful understanding?
- **Continuous Improvement**
  - Have you shown the pursuit of learning and growth?

### **Personal Growth**

*Definition: "The positive evolution of the whole person"*

- **Physical Growth**
  - Are you striving to remain healthy by understanding, respecting and managing your body's needs?
- **Social Growth**
  - Can you have successful interaction that respects the differences of a diverse and changing society?
- **Professional Growth**
  - Do you have an awareness and application of skills necessary for career success?
- **Mental Growth**
  - Are you developing the effective application of reasoning, thinking and coping?
- **Emotional Growth**
  - Have you experienced the development of healthy responses to your feelings?
- **Spiritual Growth**
  - Do you have the reflective inner strength to allow you to define your personal beliefs, values, principles and sense of balance?

### **Career Success**

*Definition: "Continuously demonstrating those qualities, attributes and skills necessary to succeed in, or further prepare for, a chosen profession while effectively contributing to society"*

- **Communications**
  - Have you developed the oral, written and verbal means whereby interaction takes place?
- **Decision Making**
  - Do you have the ability to analyze a situation and execute an appropriate course of action?
- **Flexibility/Adaptability**

- Do you have the traits that allow you to be capable of and willing to change?
- **Technical/Function Skills in Agriculture**
  - Do you have the knowledge and skills needed for a career in agriculture and related industries?

(National FFA Organization, 2013)