Perceptions of Wyoming Agriculture Teachers about the Importance of SAE's

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PERCEPTIONS OF WYOMING AGRICULTURE TEACHERS ABOUT THE IMPORTANCE OF SAE’S

BY

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This thesis is approved as a creditable and independent investigation by a candidate for the master’s degree and is acceptable for meeting the thesis requirements for this degree. Acceptance of this does not imply that the conclusions reached by the candidate are necessarily the conclusions of the major department.

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ABSTRACT

PERCEPTIONS OF WYOMING AGRICULTURE TEACHERS ABOUT THE IMPORTANCE OF SAE’S

CASEY STYVAR

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Agricultural education in the United States after the Smith Hughes Act has always included a component of the home-based project method, which now is known as a supervised agricultural experience program (SAE). This method of instruction teaches and provides students with a hands-on learning experience inside and outside of the classroom. The benefits that students receive with this form of the curriculum are second to none. Agriculture educators realize the benefits of SAE programs and how their students expand and grow in their education and skills from having an SAE. Due to changes in student and teacher culture, it is becoming harder to get students involved in an SAE program with their interests and the time commitment it takes. The number of students involved with an SAE has been declining over the years, and many new agriculture teachers have a difficult time in implementing SAE programs to their students. This research focuses on SAE benefits and limitations. Constructs measured were program interest, financial skills, leadership skills, time management skills, career goals, SAE limitations in the areas of financial means, SAE interest, parental support, community support, and peer support. A questionnaire using a 7 point likert scale was used to collect data. Respondents included 36 Wyoming agriculture educators. Years of teaching experience of the population was studied to see if it had an effect on the responses to the constructs. Results showed high means of agreeance with SAE benefit
perceptions in all constructs. SAE limitation means were high in relation to financial and parental support.

Keywords: Supervised Agriculture Experience, project-based learning, agriculture education
CHAPTER 1: Introduction

History and Background of Supervised Agriculture Experiences

Since the beginning of Vocational Education in the United States the component, Supervised Agricultural Experiences (SAE’s) has been an integral part of the Agriculture Education Program. This part of Agriculture Education serves as a tool for experiential learning and provides applications in curriculum for agriculture education. Barrick et al. (1992) defined SAE’s as the actual, planned application of concepts and principles learned in agriculture education. Students are supervised by agriculture teachers in cooperation with parents, employers and other adults who assist in the development and achievement of their education goals. The purpose is to help students develop skills and abilities leading toward a career (p. 1).

Rufus Stimson was the first to be given credit to implementing a project method in agriculture education to enhance the student learning and understanding of agriculture (Moore, 1988). Since then practical learning in and outside of the classroom has taken place in the agriculture education curriculum and model. Overtime this project-based learning idea became very popular in education programs across the United States (Moore, 1988). Students were applying their knowledge to project-based learning applications. Overtime, this project became known as a Supervised Occupational Experience (SOE) overseen by agriculture education teachers. The SOE name was changed to Supervised Agriculture Experience (SAE) as we know it today in agriculture education because “the National Research Council recommended that supervised experience be strengthened and broadened” (Wilson & Moore 2007, p. 83). This change
included SAE as a part of the agriculture curriculum and is a component of the three-model circle for agriculture education, which includes classroom instruction, SAE and FFA. Skills and knowledge that students learn while involved in an SAE help with the decisions that will affect their life.

According to Dyer and Osborne (1996) a problem that we face is the dramatic changes in agriculture and agriculture education has caused less focus and direction in SAE’s. According to Camp, Clarke and Fallon (2000) “as the agriculture industry changes and more non-traditional students enroll in agriculture classes, SAE must adapt to meet the needs of a new clientele (p. 14).

Today SAE has progressed into six categories which include ownership/entrepreneurship, placement/internship, research, exploratory, school-based enterprise and service-learning. Therefore, SAE areas have increased over the years to better include urban students and the need for agriculture progression in schools. Agricultural educators are seeing a more diverse population of students with creative ideas and a passion to utilize available resources in the agriculture industry today. With the new categories of SAE’s students are able to explore agriculture from a small project inside their classroom to a community-based project. This opens up and expands the agriculture SAE programs to benefit student learning and skills in more agriculture industry areas and according to Camp, Fallon, and Clarke SAE “must reflect the current reality and trends in agriculture” (p. 13).

Project based learning has been an integral part of the agriculture curriculum model since agricultural education began in 1917 with the passing of the Smith Hughes Act. Rufus Stimson had the idea to add a home base project component for students in
agricultural education. The project method was put into action by the Smith-Hughes Act in 1917 which stated “schools shall provide for directed or supervised practice in agriculture, either on a farm provided for by the school or other farm, for at least six months per year” (Nolan, 1918, p. 236). The purpose of this project was to help students apply skills they learned in the classroom to a home project and expand learning.

**Statement of the problem**

What are the benefits and limitations of Supervised Agriculture Experience programs on Wyoming agriculture students?

**Purpose Statement**

The purpose of this study was to describe the benefits and limitations of Wyoming agriculture teachers implementing a Supervised Agriculture Experience for their students.

The purpose of this study is to examine the benefits of a Supervised Agriculture Experience program for the agriculture educators and the students that it incorporates and to evaluate reasons for the declining student numbers in Supervised Agriculture Experience Programs.

**Objectives**

1. What are the demographics of Wyoming agriculture teachers?
2. What are Wyoming agriculture teachers reported levels of involvement with SAE’s?
3. How do Wyoming agriculture teachers perceive selected benefits to students who are engaged in an SAE program related to:
   a. Agricultural interest
   b. Financial skills
   c. Leadership skills
   d. Time management
   e. Career goals

4. What are the limitations of students having an SAE program?

**Terms**

To more greatly understand the benefits and limitations of SAE benefits and limitations the following terms were defined.

*Supervised Agriculture Experience:* “An SAE is an entrepreneurial or work-based learning experience related to your career interests and goals”. “An SAE consists of projects or enterprises within the agriculture, food and natural resources (AFNR) career pathways where you apply agriculture skills and knowledge taught in the classroom to real-world experiences (National FFA, 2018, p. 11).

*Ownership/Entrepreneurship SAE:* A student owns and operates the enterprise. The students are involved in all of the decisions of management and the financial risk associated with the business. This type of SAE could include owning and operating a lawn care business, raising and
selling animals, producing and selling vegetative crops (National FFA, 2018).

**Placement/Internship SAE:** A student will work for an agriculture employer. They will gain skills and knowledge from their agriculture employer. A student will keep records of hours, responsibilities and any earnings they might receive. This type of SAE might include working at the school greenhouse, a veterinary facility, or volunteering your time to work at a local animal shelter or animal care giver (National FFA, 2018).

**Research-Based SAE:** This type of SAE involves a student using research, analysis and the scientific method to discover new agriculture knowledge or validating current knowledge in agriculture. This type of SAE might include researching vegetation planting methods or wildlife population effects (National FFA, 2018).

**Exploratory/Foundational SAE:** This type of SAE has students learn and explore different areas in the agriculture industry. They can learn about different careers in the agriculture field and what career might be of interest to them. This type of SAE might include presentations of agriculture careers, visiting agriculture operations and industries, or shadowing a worker in the agriculture field (National FFA, 2018).

**School-Based Enterprise SAE:** This type of SAE is a school-based enterprise that is managed by the advisor and a student or group of students. This SAE type takes place outside of class hours and is in direct supervision of the advisor. This SAE type uses school facilities to produce products or services that meet a market. This type of SAE could
include building animal equipment in the shop, raising plants for sale in the greenhouse, or growing aquatic species and selling them to a market (National FFA, 2018).

**Service-Learning SAE:** This type of SAE is when a student or group of students conduct a needs assessment for the school or community. The student or students develop a project to benefit others outside of the FFA chapter. This project must align to the Agriculture, Food and Natural Resources (AFNR) Technical Standard and Career Ready Practices (National FFA 2018, p. 12).

**Limitations of the Study**

There is a very limited amount of research on the benefits and limitations on SAE projects on agriculture students. The limitation of this research was the population size in Wyoming. Wyoming agriculture education programs are very traditional and mainly have students in the ownership/entrepreneurship SAE and the placement SAE and a limited number of students involved with the other SAE types. Another limitation was the size of the population of Agriculture teachers in Wyoming. This study was generalizable to Wyoming Agriculture teachers because I had a respondent percentage of 68% of Wyoming agriculture teachers. However, this study is not generalizable to all agriculture teachers because of the population size and location of the study.
Basic Assumptions

1. Agriculture educators should implement an SAE program with a majority of their students.

2. Agriculture educators understand the SAE areas of entrepreneurship, placement, research, exploratory, school based, and service learning.

3. Agriculture educators focus on agriculture interest, financial skills, leadership skills, time management, and career goals with their students SAE’s.
Introduction SAE

If agriculture education, the emerging era, is to serve the vocational education needs of the agricultural industry as well as it has done so in the era just ended, leaders in agriculture education must acquire the same kind of vision, desire, dedication, and capability that characterized the leaders who have carried us to this point, . . . Rufus Stimson was one of those leaders (Moore, 1988 p. 56).

Rufus Stimson was the founder of the project method, which has now evolved into what we know it as today the Supervised Agriculture Experience Program. Stimson was a leader in agriculture education and saw a need for students to work on their own project and learn from it. In years’ prior, agriculture education students were only educated through lecture and then they worked on someone else’s farm as manual labor. Stimson did not like this and developed the project method where students would have a project of their own with many components of learning involved (Moore, 1988). In 1917 with the passage of the Smith Hughes Act, it was required through legislation that there be a project-based component included in secondary agricultural education (Moore, 1988). Agriculture educators began to implement this method into their programs and many agriculture leaders were promoting it. Over time, the project method evolved into a Supervised Occupational Experience (SOE). In 1988 the name changed again to a Supervised Agriculture Experience (SAE).
SAE Benefits

SAEs are very beneficial to students, helps prepare them for a future in their chosen career field, and to be productive members of society. Rubenstein and Thoron (2014) found seven constant components of successful American FFA degree star finalists in SAE programs. “Those components were as follows: goal planning/learning/career planning, utilization of program partners, income from SAE program, personal satisfaction, FFA participation, awards, and degree structure, hard work/personal growth, and complete records” (Rubenstein and Thoron, 2014 p. 167). According to Dyer and Williams (1997) agriculture teachers recognize the benefits of SAE programs in many ways including value and habits, technical skills, favorable attitudes, to name a few. SAE programs “have proved to help learners apply knowledge, clarify career choices, solve problems through decision-making, develop responsibility, and learn agricultural skills through practical experience (Rubenstein and Thoron, 2014 p. 163). SAE programs have great benefits not only to students but also to communities and society as a whole. Students who are involved in SAE programs make partnerships both in the community and industry and have a strong foundation in personal and financial growth.

Supervised agriculture experience programs not only benefit the student, they also benefit the economy of an area and the well-being of a community. According to Hanagriff, Murphy, Roberts, Briers, and Lindner (2010) SAE “expense values translate into local and state business income, which encourage jobs and economic growth” (p. 78). Many of these Supervised Agriculture Experience Programs (SAEPs) are involved in community activities and benefits the area both economically and socially. According
to Hanagriff et al. (2010) a study related to the travel of teachers and students in Texas for SAEPs “indicated $189 million in total economic value from SAE related spending” (p. 71). This economic stimulus increases and helps to maintain the growth of the area and helps to provide financial needs of the community.

However, since the passage of the Smith-Hughes Act of 1917 wording regarding the utilization of SAE programs in agricultural education has been removed from federal legislation (Steele, 1997). This has impacted the use and importance of SAEPs in schools across the nation. Steele (1997) believed that the removal of the federal legislative requirement has affected the utilization of supervised experiences within school-based agricultural education (SBAE) nationwide. Steele (1997) found participation in SAE in New York had decreased 10% since 1983. Only 29% of agricultural students had SAEs at the time the survey was completed in 1996 (p. 50). This was a decrease in programs and Steele’s (1997) study led to the question of why SAEPs are decreasing across the nation.

**SAE Engagement**

As students enter into agriculture programs, they are faced with a challenge of developing an SAE and staying active and engaged in this program. According to Friedel and Anderson (2017) relationships between specific teaching and advising practices performed by the secondary agricultural educator influences the level of engagement in classroom, FFA, and SAE activities of students. According to the National Association of Agriculture Educators (2019) “the successful integration of each of these three components results in a strong program that produces well rounded individuals who are
prepared to be leaders in agriculture, business, and industry”. Engagement levels are also based on many other social and economic components of a student’s life. According to Dyer and Osborne (1995) demographic variables affect SAE participation in many agriculture programs as well as the teacher’s experience, they found that “participation is highest in rural areas and among white, male students” (p. 10). Dyer and Osborne (1995) found that “teacher attitudes toward SAE programs are a key factor in student participation” (p. 8). Teachers value the concept of the SAE program they just have difficulty implementing the program with their students. According to Dyer and Osborne “teachers listed the most difficult activities as keeping record books and finding time for SAE programs” (p. 9). Finding time to implement and plan SAE’s for students is a challenge today for agriculture teachers.

**Implementation**

Supervised Agriculture Experience programs are executed in a variety of ways for those students involved in agriculture education. The way that an educator implements the process of making a plan and setting up the SAE influences a student’s activity and engagement in the program. When these performance areas are implemented by the educator this enhances the components of the three-component model of classroom, SAE and FFA. According to Roberts and Dyer (2004) the greatest implementation of the program is in the teacher’s instruction. When the agriculture educator focuses on instruction of the program, they tend to have the greatest effect on students being involved with an SAE.
Agriculture education programs are increasing in urban areas where teachers have a challenge to get students involved and maintain an SAEP (Rubenstein, Thoron, Cloclasure & Gordon, 2016). According to Rubenstein et al. (2016), urban School Based Agriculture Education (SBAE) programs face unique challenges engaging students in the development and implementation of SAE programs. The authors of this study found that five themes for SAE implementation must be provided to be successful, these included: “1) Engaged Teachers, 2) In-Class Supervision, 3) Student Interest, 4) Partnerships in SAE, and 5) Development of an SAE Culture” (p. 217). These five areas when implemented correctly by the instructor gave urban SBAE programs a focus for students to achieve high levels of SAE’s during their time in school. “Specifically, in-class supervision was found to be a foundation for successful SAE development and implementation” (Rubenstein et al., 2016 p. 229).

**Reasons for Decline**

There are many theories concerning what has led to the decline of student participation in the SAE program; teacher focus, teacher training, motivation, preparation, student interest and social changes of age groups. With legislation and laws contributing to the decline of SAEPs across the nation. Wilson and Moore (2007) said that the passage of the Vocational Act of 1963, which stated that “agricultural education may be provided without directed or supervised practice on a farm”, has led to a decline in the number of SAE programs in agriculture education (p. 83). Camp, Clark and Fallon (2000) stated, “Supervised agricultural experience remains an integral part of a comprehensive agricultural education program” and that “the name SAE is not
universally accepted in the profession; nevertheless, no better name has emerged” (p. 19). Camp et al. (2000) also determined that the current definition should be “SAE is the planned, supervised application of agricultural principles and concepts. Today the current definition of an SAE is

Supervised Agricultural Experience (SAE) is a student-led, instructor-supervised, work based learning experience that results in measurable outcomes within a predefined, agreed upon set of Agriculture, Food and Natural Resources (AFNR) Technical Standards and Career Ready Practices aligned to your Career Plan of Study. SAE opportunities should serve to improve agricultural literacy and skills and abilities required for careers in agriculture (The National Council for Agriculture Education, 2017 p. 20).

The SAE categories should be: “Agribusiness Entrepreneurship, Agricultural Placement, Agricultural Production, Agricultural Research, Directed School Laboratory, Agricultural Communications, Agricultural Exploration, and Improvement Projects” (Camp et al., 2000 p. 20).

Teacher education qualities play a large role in keeping students engaged and active in their own education and especially SAEP. The quality of the instructor is ultimately left up to the individual school district to hire the appropriate individual who embraces these qualities. Roberts and Dyer (2004) indicated that a school’s goal is “to hire and retain effective teachers under the assumption that effective teachers will lead to greater student learning and thus greater performance” (p.82). Roberts and Dyer (2004) indicated how the secondary environment is a lot different than it was decades ago and that the goal of schools are to hire effective teachers and retain them in the education
field. In this analysis, Roberts and Dyer (2004) used Florida agriculture education programs, teachers, county-level administrators, state staff and university faculty to identify 40 characteristics of an effective agriculture teacher. Those characteristics are areas of instruction, FFA, SAE, community relations, marketing, professionalism/professional growth, program planning/management, and personal qualities (Robert and Dyer, 2004). Roberts and Dyer (2004) found that the development of personal qualities were rated highest of characteristics and that the greatest number of characteristics was found under the category of instruction. Robert and Dyer (2004) also concluded, “it is necessary to provide experienced-based learning opportunities to nurture the development of some of these characteristics, or to use some of these characteristics as selection criteria for admitting students to teacher education programs” (p. 93). With finding these qualities in an individual they are more likely to include the three components of the agriculture education program and build a program integrating classroom, SAE and FFA together in their program.

Another reason for a decline in SAEPs could be related to how agriculture educators are prepared for teaching. McLean and Camp (2000) said, “agricultural teacher educators have experienced significant pressure over the past 15 years to reform the process by which the teachers are prepared in the profession (p. 25). McLean and Camp (2000) compiled the information and looked at the similarities and differences between institutions. None of the courses that were being taught were completely the same across the institutions. In the content compiled, only two topics were taught in all the institutions, they were presenting micro-lessons and SAE’s. McLean and Camp (2000) concluded, “curricular structure differs widely among agricultural teacher education
institutions (p. 31). Teachings of topics are similar in many areas and many courses coincide with one another. Without the commonality of courses and content being applied to agriculture educators it is nearly impossible to prioritize the main components of agriculture education across all institutions. With this strategy of educating agriculture teachers, it is impossible for these teachers to value and implement the curriculum in a collective way.

The importance of SAEs that institutions in agriculture education are putting on teaching the components of SAE programs to their students’ pursuing degrees in agriculture education plays a large role in how these educators will implement an SAEP to their students. Most agriculture educators find importance and value in the SAE program to their students. However, many teachers find it difficult to implement an SAE program to all of their students in their program. According to Rank and Retallick (2017) “SAE instruction in agriculture teacher education programs plays a role in how teachers conceptualize and implement SAEPs” (p. 144). Rank and Retallick (2017) found that some institutions had specific classes that were related to SAE components and that the majority of the SAE components that are taught in programs are taught during the students teaching component of the curriculum. Rank and Retallick (2017) found that undergraduate programs were the most common type of programs that included SAE instruction into their curriculum. According to Rank and Retallick (2017) “SAE content is embedded throughout the agricultural teacher education curriculum” (p.161). This helps to determine the importance of SAE as a component of an agriculture education program and the value of it to agriculture educators. Each institution has its own unique implementations of teaching SAE components in it curriculum.
Teacher knowledge of the curriculum and how to implement this into their classroom is another factor that has played a role in the decrease in SAEPs across the nation. According to Rubenstein, Thoron, and Estepp “a gap in the knowledge-base exists in teacher self-efficacy towards developing, implementing, and sustaining SAE programs” (p. 74). The study indicated, “95% of the participants reported SAE as an important or somewhat important component of agricultural education” (Rubenstein et al., 2014, p. 81). There is little discrepancy between pre-service teachers and seasoned agriculture educators on how they valued the roll of SAE’s in their agriculture program. According to Rubenstein et al. (2014) “examining the results of the study would lead agricultural teacher educators to believe the programs that were examined in this study are successful in preparing pre-service teachers for SAE development, instruction, evaluation, and supervision” (p. 81). However, it would be beneficial to check in with these educators after they graduated to determine how they implemented and valued SAE in their own agriculture program. More studies need to be completed in this area to help determine the best practices when implementing SAE competencies into the classroom setting and which methods are the most effective for students and teachers.

Agriculture educators are faced with the problem of time demands. In an agriculture program having students with an SAEP is a time demanding task that can lead to teacher over exertion and eventually teacher burnout. Schut (2003) talked about the Supervised Agriculture Experience as being an integral part of an agriculture education program and how teachers need to balance this in their program so that they do not burn out. Agriculture teachers have an array of responsibilities as teachers to their programs and to the students. They have to manage their time wisely and use their resources when
helping students with the SAE programs. Schut (2003) stated that teacher SAE visits should be planned out a week in advance so that students have time to fill out the proper paperwork and be ready for the teacher visit. Some schools allow teachers to have SAE time built into their school day while others have to find time out of the school day to visit projects. This can be a daunting task for an agriculture educator and can lead to less time spent with SAEs and eventually be viewed as less important. According to Dyer and Osborne (1995) “teachers listed the most difficult activities as keeping record books and finding time for SAE programs” (p. 9). Teachers need to use the resources of the community to help and use their expertise with a student’s SAE program. Schut (2003) stated, “many have specialized experience that students can use in planning and conducting their SAE” (p. 24). This helps students to enhance their program and help to assist the teacher with the responsibilities of the program. “The management of a SAE program must be a balanced part in the local program and planning and utilizing school resources are necessary to manage the task” (Schut, 2003, p.24).

**Summary**

Supervised Agriculture experience programs are beneficial to students across the nation. The SAE components as of January 2019 are Service Learning, School-Based Enterprise, Research, Placement Internship, Ownership Entrepreneurship and Foundational (SAE for All, 2019). Prior to this change and what the research is based on the major components of SAE consisted of Exploratory, Entrepreneurship, Placement, Experimental and Analytical. The exploratory component helps student to become literate in agriculture and more aware of the possible careers in agriculture (Moore &
Flowers, 1993). The entrepreneurship SAE is for students who own and operate an agriculture enterprise, Placement is for students who work in the agriculture industry and experimental was for students to plan and experiment using the scientific method in an area in agriculture (Moore & Flowers, 1993). The analytical component consists of an extensive amount of research over time in the agriculture industry where the student investigates and analyzes a problem in agriculture (Moore & Flowers, 1993). All of these components of an SAEP help students in both academic and social skills which helps students build and grow as individuals.

Teachers hold a high level of value on the importance of an SAEP for their students. Dyer and Osborne (1995) concluded that many teachers value the concept of an SAE program but they fail to implement it into their program. SAE programs vary greatly by states and how teacher training is implemented from the institution of that agriculture educator. According to Dyer and Osborne (1996) the use of classroom instruction and materials improves the quality of SAE programs. The quality of the program has an effect on participation in an SAE in a school and how the programs are sustained. Teachers may be the greatest determinants of SAE program quality (Dyer and Osborne, 1996).

Supervised Agriculture Experience Programs provide many skills that enhance a student’s education and aids in preparing them for future careers. Skills in communication, business, decision making and work ethic are benefits of a student being involved in an SAE. Agriculture teachers value the program and concept, but many are not trained on effective implementation of the program and struggle with finding time and resources for this program. Research shows that SAE programs are on the decline
and that agriculture teachers are the main component of implementing and having students maintain an SAE. This study will look at years of teaching experience and determine if benefit areas and limitations of having a student with an SAE is consistent with years of experience.
CHAPTER 3: Methods

Statement of the problem

What are the benefits and limitations of Supervised Agriculture Experience programs on Wyoming agriculture students? Benefit areas in interest, finance, leadership, time management, and career goals will help to determine the importance of and SAE and how they help students. Identifying limitation areas will help in recognizing these problem areas and potentially lead to solutions to these areas.

Purpose Statement

The purpose of this study was to describe the benefits and limitations of Wyoming agriculture teachers implementing a Supervised Agriculture Experience for their students.

The purpose of this study is to examine the benefits of a Supervised Agriculture Experience program for the agriculture educators and the students that it incorporates and to evaluate reasons for the declining student numbers in Supervised Agriculture Experience Programs.

Objectives

1. What are the demographics of Wyoming agriculture teachers?

2. What are Wyoming agriculture teachers reported levels of involvement with SAE’s?
3. How do Wyoming agriculture teachers perceive selected benefits to students who are engaged in an SAE program related to:
   a. Agricultural interest
   b. Financial skills
   c. Leadership skills
   d. Time management
   e. Career goals

4. What are the limitations of students having an SAE program?

**Procedures**

Literature review research methods were used to study the benefits and the continual decline of Supervised Agriculture Experience programs for students and to guide scale development. Contributing factors in research were found through the World Wide Web, Journal of Agriculture Education, Journal of the American Association of Teacher Educators in Agriculture and The Agricultural Education Magazine.

The population that was studied was the Wyoming agriculture teachers. A list of teachers and email addresses was attained through the state FFA Advisor. Institutional Review Board approval was obtained and proper protocol was followed regarding collecting information from the Wyoming Agriculture teachers (See Appendix B). The teachers were sent a letter describing the study and a link to the survey. A reminder email was sent out every two weeks for the first two months. Then personal phone contacts were made by the researcher and a reminder email sent out every week for the last month.
Research Design

The research that was conducted for this study was quantitative and descriptive. This study looked at five key benefit areas of an SAE. The researcher also looked at the limitations of students being fully involved in an SAE program. The quantitative part of the study looked at areas of greater benefit and limitations for students having an SAE program. This data was then analyzed using means and sums. One-way ANOVAs comparing scale means and years of teaching experience were not significant, so there was no need to refer to Multiple Comparisons.

Population

The Wyoming Agriculture educators were the researchers’ population of interest in the study of SAE benefits and program implementation. There were 53 Wyoming agriculture teachers and 36 of them responded to the survey. These teachers will be evaluated by groups the first sub group will be teachers with 0-5 years of teaching experience, second group will be teachers with 6-10 year teaching experience and last group would be teacher with >11 years of teaching experience. According to Trochim, Donnelly, and Arora (2016) “it assures that you will be able to represent not only the overall population, but also key groups of the population” (p. 98). These samples will have less variables, be closer in similarity and reduce noise of the data. The survey will be an electronic survey to collect data and will be sent through an email with a link to the survey. The questions in the survey will be related to SAE benefits to students, community, programs and will include area benefits of the following: financial, leadership, time management, careers and interest. The implementation questions in the
survey will include the types of SAE’s and the engagement of the students and community. The Likert scale will be used to collect responses based on agree or disagree of the items in the survey. According to Trochim et al. (2016) “this type of scale measures the agreement with a statement that reflects a particular attitude or idea” (p. 153).

**Questionnaire Development**

The questionnaire was developed with questions around the benefits of SAE’s for students in agriculture education programs. This study utilized research of SAE components of building agriculture interests, financial skills, leadership skills, time management skills and career goals through an online questionnaire. These categories were sections of the survey because they fit directly into career field activities in agriculture. These categories were used to identify strengths and weaknesses of SAEs and also limitations of students having an SAE. The questionnaire was sent to a small population of agriculture instructors outside of Wyoming to test the instrument to see if any questions or errors arose and to test functionality. After feedback and analysis, the researcher adjusted questions to be more specific and easier to comprehend.

**Data Collection and Analysis**

The survey was emailed out to all 53 Wyoming Agriculture teachers. After two weeks a reminder was sent out to teachers, this process was done for two months. Personal contacts were made after the first two months and a reminder email was sent out every week for a month. In an effort to increase response rates the researcher contacted
the individuals by phone to remind them to answer the questionnaire. A response rate of 36 which is 68% was achieved with this process which made the results more generalizable. A measure of internal consistency was analyzed (Table 1). All of the five constructs were above 0.7 which indicates internal consistency and show the questionnaire was reliable.

Table 1:

*Cronbach’s Alpha Reliabilities of Constructs Utilized in this Study*

<table>
<thead>
<tr>
<th>Construct</th>
<th>Scale Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture and Program Interest</td>
<td>.82</td>
</tr>
<tr>
<td>Financial Skills</td>
<td>.94</td>
</tr>
<tr>
<td>Leadership Skills</td>
<td>.81</td>
</tr>
<tr>
<td>Time Management</td>
<td>.93</td>
</tr>
<tr>
<td>Career Planning</td>
<td>.89</td>
</tr>
<tr>
<td>Limitations of SAE’s</td>
<td>.74</td>
</tr>
</tbody>
</table>
CHAPTER 4: Results

The purpose of this study was to explore and identify benefits and limitations of SAEs in Wyoming Agriculture Education Programs. Objective factors included student interests, financial skills, leadership skills, time management skills and career goals.

Demographic data was collected to help see if correlations existed between levels of teaching experience and the benefits and limitations of Wyoming Agriculture Programs. Of the respondents 34 of them were in single teacher programs with only two of them being in a multi teacher program. Also with the respondents 66.67 percent of them have only been in the current programs less than 10 years. The respondents offered very little variation between levels of teaching experience and the benefits and limitations of Wyoming Agriculture Programs.
Table 2

Demographic Variables. SAE Questionnaire Respondents (n=36)

<table>
<thead>
<tr>
<th></th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>25</td>
<td>69.4</td>
</tr>
<tr>
<td>Female</td>
<td>11</td>
<td>30.6</td>
</tr>
<tr>
<td><strong>Current Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-30</td>
<td>9</td>
<td>25</td>
</tr>
<tr>
<td>31-40</td>
<td>11</td>
<td>30.6</td>
</tr>
<tr>
<td>41-50</td>
<td>7</td>
<td>19.4</td>
</tr>
<tr>
<td>51+</td>
<td>9</td>
<td>25</td>
</tr>
<tr>
<td><strong>Years Teaching Experience</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-5</td>
<td>7</td>
<td>19.5</td>
</tr>
<tr>
<td>6-10</td>
<td>12</td>
<td>33.3</td>
</tr>
<tr>
<td>11-15</td>
<td>4</td>
<td>11.1</td>
</tr>
<tr>
<td>16-20</td>
<td>5</td>
<td>13.9</td>
</tr>
<tr>
<td>20+</td>
<td>8</td>
<td>22.2</td>
</tr>
</tbody>
</table>

The male teachers had a higher percentage of students who had an ownership/entrepreneurship SAE than female teachers. However, with the low number of respondents and two of those teachers responding 80-100% of their students having ownership/entrepreneurship SAE’s this is not an accurate correlation between male and
female teachers. The typical respondent is male, under 40 years of age, and has been teaching for less than 10 years.

One-way ANOVAs were calculated to compare scale means across groups of teachers with similar teaching experience to scale means on the benefits of an SAE on the scales of *program interests, financial skills, leadership skills, time management* and *limitation of students having an SAE.* The means of participants were compared using a one-way ANOVA. No significant (p<.05) differences were found.

**Objective 3a**

After collecting and evaluating data on whether and SAE will increase agriculture and program interests it was concluded that the teacher perceptions of students who have an SAE have more of an interest in agriculture and in the agriculture program. The question of whether an SAE increases a student's interest in agriculture was found that 77.77% of respondents were in agreement with this statement and only 2.78% of respondents were in disagreement with this question. In regard to the question of whether and SAE promotes and builds program numbers the majority of respondents at 52.77% were in agreement and 11.11% of the respondents disagreed with this statement and the remaining 36.12% of respondents neither agreed or disagreed with this statement. When it comes to an SAE increasing students’ awareness of agriculture issues 88.88% of the respondents were in agreement and 2.78% disagreed. The next statement to whether an SAE promotes agriculture awareness in the school 66.66% of the respondents were in agreement with this and 8.33% of the respondents disagreed. The last
statement as to whether and SAE promotes agriculture awareness in the community

80.55% of the respondents agreed and 2.78% of the respondents disagreed.

Table 3

*Student Agriculture and Program Interests Construct (n=36)*

<table>
<thead>
<tr>
<th>Statement</th>
<th>Mean</th>
<th>SD</th>
<th>SLD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SLA</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase students’ interest in agriculture</td>
<td>5.42</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>7</td>
<td>14</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Promotes and build program numbers</td>
<td>4.78</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>13</td>
<td>10</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Increases student awareness of agriculture issues</td>
<td>5.67</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>13</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>Promotes agriculture awareness in the school</td>
<td>5.03</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>9</td>
<td>13</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Promotes agriculture awareness in the community</td>
<td>5.39</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>6</td>
<td>13</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>Scale Mean</td>
<td>5.26</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


The program interests scale means of respondents’ grouped by pooled years of teaching experience were compared using a one-way ANOVA. No significant differences were found (F(.98) = .39, p > .05). The mean program interest scores did not differ significantly based on pooled years of teaching experience. Respondents with 0-5 years of teaching experience had a mean score of 5.06 (SD = .46). Respondents with 6-10 years
of teaching experience had a mean score of 5.52 (SD = 1.04). Respondents with 11+ years of teaching experience had a mean score of 5.15 (SD = .89).

Table 4

One-Way Analysis of Variance ANOVA for Program Interests

<table>
<thead>
<tr>
<th>Constructs</th>
<th>SS</th>
<th>MS</th>
<th>df</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Interest</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>2.48</td>
<td>1.24</td>
<td>2</td>
<td>.98</td>
<td>.49</td>
</tr>
<tr>
<td>Within Groups</td>
<td>43.62</td>
<td>1.32</td>
<td>33</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Objective 3b

After collecting and evaluating data on whether and SAE will increase the student’s financial skills it was concluded that students who have an SAE will have an increase in their financial skills in record analysis, record keeping, financial decision making, and financial communication skills. The question of whether an SAE increases a student’s business skills was found that 97.22% of respondents were in agreement with this statement and only 2.78% of respondents were in disagreement with this question. In regard to the question of whether an SAE promotes financial adjustments using inputs through record analysis the majority of respondents at 91.66% were in agreeance and 8.33% of the respondents neither agreed nor disagreed with this statement. When it comes to an SAE developing record keeping and business management skills 97.22% of the respondents were in agreement and 2.78% neither agreed nor disagreed. The next
statement to whether an SAE increases a student’s financial skill in decision-making process 91.66% of the respondents were in agreement with this and 2.78% of the respondents disagreed. The last statement as to whether and SAE promotes a students’ financial communication skills 88.88% of the respondents agreed and 11.12% of the respondents neither agreed nor disagreed.

Table 5

Student Financial Skills Construct (n=36)

<table>
<thead>
<tr>
<th>Statement</th>
<th>Mean</th>
<th>SD</th>
<th>SLD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SLA</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increases students’ business skills</td>
<td>5.94</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>14</td>
<td>6</td>
<td>15</td>
</tr>
<tr>
<td>Promotes financial adjustments through record analysis</td>
<td>5.78</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>14</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>Develops record keeping and business management skills</td>
<td>6.00</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>14</td>
<td>5</td>
<td>16</td>
</tr>
<tr>
<td>Increases student financial skill in decision-making process</td>
<td>5.92</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>12</td>
<td>5</td>
<td>16</td>
</tr>
<tr>
<td>Promotes a students’ financial communication skills</td>
<td>5.67</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>15</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td>Scale Mean</td>
<td>5.86</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


The financial skills scale means of respondents’ grouped by pooled years of teaching experience were compared using a one-way ANOVA. No significant differences
were found (F(1.04) = .37, p > .05). The mean financial skills program interest scores did not differ significantly based on pooled years of teaching experience. Respondents with 0-5 years of teaching experience had a mean score of 5.40 (SD = 1.01). Respondents with 6-10 years of teaching experience had a mean score of 5.97 (SD = 1.00). Respondents with 11+ years of teaching experience had a mean score of 5.98 (SD = .89).

Table 6

One-Way Analysis of Variance ANOVA for Financial Skills

<table>
<thead>
<tr>
<th>Constructs</th>
<th>SS</th>
<th>MS</th>
<th>df</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Skills</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>1.85</td>
<td>.93</td>
<td>2</td>
<td>1.04</td>
<td>.37</td>
</tr>
<tr>
<td>Within Groups</td>
<td>29.42</td>
<td>.89</td>
<td>33</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Objective 3c

After collecting and evaluating data on whether and SAE will increase the student’s leadership skills it was concluded that students who have an SAE will have an increase in their leadership skills in confidence, responsibility, motivation in agriculture, decision making, and communication. The question of whether an SAE increases a student’s confidence 97.14% of respondents were in agreement with this statement and 2.86% of respondents neither agreed nor disagreed with this question. In regard to the question of whether and SAE promotes and builds student responsibility 100% were in agreeance with this statement. When it comes to an SAE developing the students’
motivation in agriculture 88.57% of the respondents were in agreement and 11.43% neither agreed nor disagreed. The next statement to whether an SAE increases a student’s skill in the decision-making process 97.14% of the respondents were in agreement with this and 2.86% of the respondents neither agreed nor disagreed. The last statement as to whether and SAE promotes a students’ communication skills 100% of the respondents agreed.

Table 7

*Student Leadership Skills Construct (n=35)*

<table>
<thead>
<tr>
<th>Statement</th>
<th>Mean</th>
<th>SD</th>
<th>SLD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SLA</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increases student confidence</td>
<td>5.77</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>18</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>Promotes and builds student responsibility</td>
<td>6.34</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>8</td>
<td>7</td>
<td>20</td>
</tr>
<tr>
<td>Develops the students’ motivation in agriculture</td>
<td>5.74</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>12</td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td>Increases student skills in decision-making process</td>
<td>6.00</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>13</td>
<td>6</td>
<td>15</td>
</tr>
<tr>
<td>Promotes a students’ communication skills</td>
<td>6.03</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>13</td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td>Scale Mean</td>
<td>5.98</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


The leadership skills scale means of respondents’ grouped by pooled years of teaching experience were compared using a one-way ANOVA. No significant differences
were found (F(.82) = .45, p > .05). The mean leadership skills scores did not differ significantly based on pooled years of teaching experience. Respondents with 0-5 years of teaching experience had a mean score of 5.71 (SD = .91). Respondents with 6-10 years of teaching experience had a mean score of 6.15 (SD = .55). Respondents with 11+ years of teaching experience had a mean score of 5.96 (SD = .74).

Table 8

One-Way Analysis of Variance ANOVA for Leadership Skills

<table>
<thead>
<tr>
<th>Constructs</th>
<th>SS</th>
<th>MS</th>
<th>df</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership Skills</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>.85</td>
<td>.42</td>
<td>2</td>
<td>.82</td>
<td>.45</td>
</tr>
<tr>
<td>Within Groups</td>
<td>16.50</td>
<td>.52</td>
<td>32</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Objective 3d

After collecting and evaluating data on whether and SAE will increase the student’s time management skills it was concluded that students who have an SAE will help students enhance their time management skills in meeting deadlines, avoiding distractions, time awareness of tasks, organization skills, and long and short term goals. The question of whether an SAE helps students to meet deadlines 94.29% of respondents were in agreement with this statement and 5.71% of respondents neither agreed nor disagreed with this question. In regard to the question of whether an SAE helps students use their time wisely and avoid distractions 82.86% were in agreement with this statement.
and 17.14% neither agreed nor disagreed. When it comes to an SAE helping develop time awareness of tasks 97.15% of the respondents were in agreement and 2.86% neither agreed nor disagreed. The next statement to whether an SAE increases a student’s organization skills 91.43% of the respondents were in agreement with this and 8.57% of the respondents neither agreed nor disagreed. The statement as to whether and SAE improves a students’ long-term goals 91.43% of the respondents agreed and 8.57% of the respondents neither agreed nor disagreed. The last statement as to whether and SAE improves a students’ short-term goals 94.29% of the respondents agreed and 5.71% of the respondents neither agreed nor disagreed.

Table 9

_Student Time Management Skills Construct (n=35)_

<table>
<thead>
<tr>
<th>Statement</th>
<th>Mean</th>
<th>SD</th>
<th>SLD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SLA</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helps students to meet deadlines</td>
<td>5.66</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>16</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>Use their time wisely and avoid distractions</td>
<td>5.31</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>18</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Develops time awareness of tasks</td>
<td>5.66</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>19</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Increases student’s organization skills</td>
<td>5.69</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>15</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>Improves a student’s long-term goals</td>
<td>5.80</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>12</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>Improves a student’s short-term goals</td>
<td>5.77</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>15</td>
<td>7</td>
<td>11</td>
</tr>
<tr>
<td>Scale Mean</td>
<td>5.65</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The management skills scale means of respondents’ grouped by pooled years of teaching experience were compared using a one-way ANOVA. No significant differences were found (F(.15) = .86, p > .05). The mean management skill scores did not differ significantly based on pooled years of teaching experience. Respondents with 0-5 years of teaching experience had a mean score of 5.69 (SD = .80). Respondents with 6-10 years of teaching experience had a mean score of 5.52 (SD = .85). Respondents with 11+ years of teaching experience had a mean score of 5.68 (SD = .85).

Table 10

*One-Way Analysis of Variance ANOVA for Time Management Skills*

<table>
<thead>
<tr>
<th>Constructs</th>
<th>SS</th>
<th>MS</th>
<th>df</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>.21</td>
<td>.10</td>
<td>2</td>
<td>.15</td>
<td>.86</td>
</tr>
<tr>
<td>Within Groups</td>
<td>22.42</td>
<td>.70</td>
<td>32</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Objective 3e**

After collecting and evaluating data on whether and SAE will help students with their career goals it was concluded that students who have an SAE will have more awareness and focus of their career goals in developing a career goal, increasing career awareness, increasing goal oriented students, and improving career goals. The question of whether an SAE helps a student to develop a career 86.11% of respondents were in agreement with this statement and 13.89% of respondents neither agreed nor disagreed.
with this question. In regard to the question of whether an SAE helps promote career awareness with students 97.14% were in agreement with this statement and 2.86% neither agreed nor disagreed. When it comes to an SAE promoting goal-oriented students 94.29% of the respondents were in agreement and 5.71% neither agreed nor disagreed. The next statement to whether an SAE increases agriculture career awareness 100% of the respondents were in agreement. The last statement as to whether and SAE improves a students’ career goals 91.43% of the respondents agreed and 8.57% of the respondents neither agreed nor disagreed.

Table 11

Student Career Goals Construct (n=35)

<table>
<thead>
<tr>
<th>Statement</th>
<th>Mean</th>
<th>SD</th>
<th>SLD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SLA</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helps students to develop a career</td>
<td>5.36</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>19</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Promotes career-awareness with student</td>
<td>5.66</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>19</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Promotes goal oriented students</td>
<td>5.77</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>15</td>
<td>7</td>
<td>11</td>
</tr>
<tr>
<td>Increases agriculture career awareness</td>
<td>5.83</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>18</td>
<td>5</td>
<td>12</td>
</tr>
<tr>
<td>Improves students career goals</td>
<td>5.60</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>17</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Scale Mean</td>
<td>5.64</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


The career goals scale means of respondents’ grouped by pooled years of teaching experience were compared using a one-way ANOVA. No significant differences were
found \((F(.43) = .65, p > .05)\). The mean career goals scores did not differ significantly based on pooled years of teaching experience. Respondents with 0-5 years of teaching experience had a mean score of 5.43 \((SD = .79)\). Respondents with 6-10 years of teaching experience had a mean score of 5.78 \((SD = 1.00)\). Respondents with 11+ years of teaching experience had a mean score of 5.64 \((SD = .63)\).

Table 12

*One-Way Analysis of Variance ANOVA for Career Goals*

<table>
<thead>
<tr>
<th>Constructs</th>
<th>SS</th>
<th>MS</th>
<th>df</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Career Goals</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Group</td>
<td>.56</td>
<td>.28</td>
<td>2</td>
<td>.43</td>
<td>.65</td>
</tr>
<tr>
<td>Within Groups</td>
<td>20.65</td>
<td>.65</td>
<td>32</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Objective 4**

After collecting and evaluating data on the limitation of a student having an SAE it was concluded that the highest limitation of students having an SAE was the financial obligation. The question of whether an SAE limitation is getting started financially 86.11% of respondents were in agreement with this statement 11.11% of respondents neither agreed or disagreed and 2.78% disagreed. In regard to the question of whether an SAE limitation is the students’ interest in SAEs 86.11% were in agreeance with this statement, 5.56% disagreed and 8.33% neither agreed nor disagreed. When it comes to an SAE limitation being support by parents 69.44% of the respondents were in agreement,
8.34% disagreed and 22.22% neither agreed nor disagreed. The next statement to whether an SAE limitation being support by the community 50% of the respondents were in agreement, 16.64% disagreed and 30.56% neither agreed nor disagreed. The last statement as to whether an SAE limitation was student support by peers 47.22% of the respondents agreed, 22.22% disagreed and 30.56% of the respondents neither agreed nor disagreed.

Table 13

*Student Limitations of an SAE Construct (n=36)*

<table>
<thead>
<tr>
<th>Statement</th>
<th>Mean</th>
<th>SD</th>
<th>SLD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SLA</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students getting started financially</td>
<td>5.36</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>17</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>Students interest in SAEs'</td>
<td>5.17</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>19</td>
<td>11</td>
<td>1</td>
</tr>
<tr>
<td>Students support for SAE by parents</td>
<td>5.11</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>8</td>
<td>13</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Student support for SAE by community</td>
<td>4.50</td>
<td>0</td>
<td>1</td>
<td>6</td>
<td>11</td>
<td>11</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Student support for SAE by peers</td>
<td>4.72</td>
<td>0</td>
<td>0</td>
<td>8</td>
<td>11</td>
<td>5</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Scale Mean</td>
<td>4.97</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


The SAE limitations scale means of respondents’ grouped by pooled years of teaching experience were compared using a one-way ANOVA. No significant differences were found (F(.20) = .82, p > .05). The mean SAE limitations interest scores did not differ significantly based on pooled years of teaching experience. Respondents with 0-5
years of teaching experience had a mean score of 4.86 (SD = .78). Respondents with 6-10 years of teaching experience had a mean score of 5.08 (SD = .91). Respondents with 11+ years of teaching experience had a mean score of 4.94 (SD = .74).

Table 14

*One-Way Analysis of Variance ANOVA for Limitations*

<table>
<thead>
<tr>
<th>Constructs</th>
<th>$SS$</th>
<th>$MS$</th>
<th>$df$</th>
<th>$F$</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limitations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>.26</td>
<td>.13</td>
<td>2</td>
<td>.20</td>
<td>.82</td>
</tr>
<tr>
<td>Within Groups</td>
<td>21.44</td>
<td>.65</td>
<td>33</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
CHAPTER 5: Conclusion

The design of this study was quantitative and descriptive and describes perceived benefits and limitations of SAE programs by Wyoming agriculture teachers. To determine perceived benefits and limitations of an SAE program Wyoming agriculture teachers were selected. A small population of Wyoming Agriculture teachers participated in the study and as a result the findings could not be generalized to all Wyoming Agriculture educators. The data was collected and analyzed using SPSS Software.

This study determined the perceived SAE benefits and limitations of Wyoming Agriculture teachers and their students in an SAE. SAE implementation was analyzed by different teaching populations including experience and age. No significant relationships in data existed in these categories. Wyoming educators equally value the SAE programs set by the National FFA regardless of their experience and age. This was consistent according to Dyers and Williams (1997) who reported that SAE’s were beneficial to students in personal, occupational, and educational areas. The largest population of SAE programs in the state of Wyoming are the ownership/Entrepreneurship and Placement SAE types. This is also consistent with Wilson and Moore (2007) who found the two most common types of SAEs was placement and entrepreneurship. The research focused on the traditional SAE types prior to the foundational and immersion SAE types coming out in January 2019.

The study showed that agriculture teachers perceive a value of the benefits that agriculture teachers saw in their students that are involved in an SAE Program. This is consistent with Steele (1997) which found that “agricultural educators continue to
espouse a theory of learning that emphasizes SAE” (p. 55). With the benefit that an SAE increases agriculture and program interests 73.33% of agriculture educators were in agreement. Students having an SAE program in Wyoming will increase a student’s interest in agriculture and promote agriculture awareness in both school and community.

In regard to the benefit of increasing a student’s financial skill 93.33% of Wyoming agriculture teachers agreed that having an SAE really benefits students with this life skill. With developing a student’s leadership skills 96.57% of Wyoming teachers were in agreeance that students with and SAE were increasing and adding to their leadership skills. Time management is another important life skill that an SAE program can help teach and in the survey 91.43% of Wyoming teachers were in agreement that an SAE program contributes to a student improving their time management skills. The last benefit of an SAE studied was career goals and 93.79% of Wyoming teachers were in agreement that a student having an SAE program developed and were more aware of their career goals. Similarly, Rubenstein and Thoron (2014) found that a successful SAE consists of an agriculture career base. The largest factors for limitations of a student having and developing an SAE was financial means and having the support by their parents with 86.11% of Wyoming teachers in agreement.

Findings from this study provide many meaningful SAE benefits that agriculture teachers need to be aware of that contribute to the life skills and success of their students. Further research could be done on student benefit perceptions. The limitations of students developing an SAE needs to be evaluated and addressed. The support of parents and finances are crucial components to students developing an SAE. To focus efforts on
support and increase financial opportunities for students would help increase student participation in an SAE program.

**Implications**

Based on conclusions resulting from the study, Wyoming Agriculture Teachers valued the benefits of an SAE program equally. Wyoming Agriculture Teachers agreed that the two biggest limitations of students having and developing and SAE were financial means and parental support. According to Dyer and Osborne (1995) Agriculture teachers value the concept and benefits that an SAE program provides to students. This study affirmed the concept that SAE programs are highly valued and many important benefits are taught when students have an SAE program.

Implications exist directly related to student limitations of developing an SAE program. These limitations need to be further investigated with a larger population to determine if these limitations are a certainty nationwide or are more of an area limitation. Given that this study was the first to study Wyoming Agriculture Program SAE benefits and limitations further research needs to be done in other benefit areas and limitation areas. This study provided validation on the benefits of what an SAE program can provide for students, such as agriculture interests, financial skills, leadership skill, time management and career goals and what limitations exist for students developing SAE programs. Further research could be done by expanding the population to include students involved in agriculture programs.
REFERENCES


APPENDIX A

Questionnaire

What is your current age?
1. 20-30
2. 30-40
3. 40-50
4. 50+

What is your sex?
1. Male
2. Female
3. Other

How many years have you taught Secondary Agriculture Education?
1. 1
2. 2
3. 3
4. 4
5. 5
6. 6
7. 7
8. 8
9. 9
10. 10
11. 11
12. 12
13. 13
14. 14
15. 15
16. 16
17. 17
18. 18
19. 19
20. 20
21. 21
22. 22
23. 23
24. 24
25. 25
26. 26
27. 27
28. 28
29. 29
30. 30
31. 31
32. 32
33. 33
34. 34
35. 35
36. 36
37. 37
38. 38
39. 39
40. 40
41. 41
42. 42
43. 43
44. 44
45. 45

What type of program are you currently teaching in?
1. Single Teacher
2. Multi-Teacher

How many years have you been teaching in your current program?
1. 0-9
2. 10-19
3. 20-29
4. 30+

How many students are currently in your Agriculture Education Program?
1. 0-24
2. 25-49
3. 50-74
4. 75-99
5. 100+

How many students in your Agriculture Education Program are current FFA members?
1. 0-24
2. 25-49
3. 50-74
4. 75-99
5. 100+

What percent of students do not have an SAE?
1. 0%-9%
2. 10%-19%
3. 20%-29%
4. 30%-39%
5. 40%-49%
6. 50%-59%
7. 60%-69%
8. 70%-79%
9. 80%-89%
10. 90%-100%

What percentage of parents are involved with the students SAE?

How many teacher visitations (either school based and those not at the school) are completed with students SAE's in one year?
1. 1
2. 2
3. 3
4. 4
5. 5+

What percent of students continue with their SAE project after high school graduation?

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What percentage of students are profitable with their SAE project?

<table>
<thead>
<tr>
<th>1</th>
<th></th>
</tr>
</thead>
</table>

Agriculture and Program Interest: What is your level of agreement or disagreement with the following statements regarding students having an SAE project?

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Slightly Disagree</th>
<th>Disagree</th>
<th>neither agree or disagree</th>
<th>Agree</th>
<th>Slightly Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increases student interest in Agriculture.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Promotes and builds program numbers.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Increases student awareness of agriculture issues.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Promotes agriculture awareness in the school.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Promotes agriculture awareness in the community.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

Financial Skills: What is your level of agreement or disagreement with the following statements regarding students having an SAE project?

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Slightly Disagree</th>
<th>Disagree</th>
<th>neither agree or disagree</th>
<th>Agree</th>
<th>Slightly Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increases students’ business skills.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Promotes financial adjustments through record analysis.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Develops record keeping and business management skills.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Increases student financial skill in decision-making process.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Promotes a students’ financial communication skills.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

Leadership Skills: What is your level of agreement or disagreement with the following statements regarding students having an SAE project?

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Slightly Disagree</th>
<th>Disagree</th>
<th>neither agree or disagree</th>
<th>Agree</th>
<th>Slightly Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
</table>

...
| Increases student confidence. | □ | □ | □ | □ | □ | □ | □ | □ |
| Promotes and builds student responsibility. | □ | □ | □ | □ | □ | □ | □ | □ |
| Develops the students’ motivation in agriculture. | □ | □ | □ | □ | □ | □ | □ | □ |
| Increases student skills in decision-making process. | □ | □ | □ | □ | □ | □ | □ | □ |
| Promotes a students’ communication skills. | □ | □ | □ | □ | □ | □ | □ | □ |

Time Management: What is your level of agreement or disagreement with the following statements regarding students having an SAE project?

| Helps students to meet deadlines. | □ | □ | □ | □ | □ | □ | □ | □ |
| Use their time wisely and avoid distractions. | □ | □ | □ | □ | □ | □ | □ | □ |
| Develops time awareness of tasks. | □ | □ | □ | □ | □ | □ | □ | □ |
| Increases student’s organization skills. | □ | □ | □ | □ | □ | □ | □ | □ |
| Improves a student’s long-term goals. | □ | □ | □ | □ | □ | □ | □ | □ |
| Improves a student’s short-term goals. | □ | □ | □ | □ | □ | □ | □ | □ |

Career Goals: What is your level of agreement or disagreement with the following statements regarding students having an SAE project?

| Helps students to develop a career. | □ | □ | □ | □ | □ | □ | □ | □ |
| Promotes career-awareness with student. | □ | □ | □ | □ | □ | □ | □ | □ |
| Promotes goal oriented students. | □ | □ | □ | □ | □ | □ | □ | □ |
| Increases agriculture career awareness. | □ | □ | □ | □ | □ | □ | □ | □ |
| Improves students career goals. | □ | □ | □ | □ | □ | □ | □ | □ |

Limitations of an SAE: What is your level of agreement or disagreement with the following statements regarding students’ obstacles in pursing an SAE project?

| Students getting started Financially | □ | □ | □ | □ | □ | □ | □ | □ |
| Students interest in SAEs’ | □ | □ | □ | □ | □ | □ | □ | □ |
| Students support for SAE by parents | □ | □ | □ | □ | □ | □ | □ | □ |
| Student support for SAE by Community | □ | □ | □ | □ | □ | □ | □ | □ |
| Student support for SAE by peers | □ | □ | □ | □ | □ | □ | □ | □ |

Is there anything else related to SAE’s that you feel the researchers should know?
APPENDIX B
SDSU IRB Approval

Date: November 28, 2018
Investigator: Casey Styver
Project Title: Supervised Agriculture Experience Study of Benefits and Limitations in Agriculture Programs in Wyoming
Determination: Exempt, Category 2
Approval #: IRB-1811014-EXM

The project referenced above is exempt from further review by the Institutional Review Board of South Dakota State University. Exemption is claimed on number(s) 48.101 (b) (2) of the criteria for exemption outlined in 45 CFR 46, section 101.

Note: If the project is changed, it should be re-submitted to the IRE for a determination of whether it still satisfies exemption criteria.

Dianne Nagy
Research Integrity and Compliance Officer