## COLLEGE STUDENTS

A Thesis<br>Presented in Partial Fulfillment of the Requirements for the Degree of Master of Science<br>with a<br>Major in Agricultural Education<br>in the<br>College of Graduate Studies<br>University of Idaho<br>by<br>Pamela M. Turnbull

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## Authorization to Submit Thesis

This thesis of Pamela M. Turnbull, submitted for the degree of Master of Science with a Major in Agricultural Education and titled "The Relationship Between FFA and SAE Involvement and College Involvement with College of Agricultural and Life Sciences College Students," has been reviewed in final form. Permission, as indicated by the signatures and dates below, is now granted to submit final copies to the College of Graduate Studies for approval.

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#### Abstract

Education is a critical part in one's future to being hired for a job. Post-secondary education is a sought-after experience for many jobs out there, yet so many people are lacking it. Researchers have found that career and technical education is a key component to achieving a post-secondary education. Although, researchers have also shown that students who were involved in secondary FFA and SAE were not more successful than students who did not participate in those activities. The purpose of this study was to determine if involvement in FFA and SAEs during high school had a relationship with college involvement. Survey research methods were used to collect the data. At the University of Idaho, in the College of Agricultural and Life Sciences, 211 students completed the survey. There were 92 out of 211 students who were involved in FFA during secondary education and 82 students reported that they had SAE projects. The researcher identified that there was a moderate correlation of 0.345 between FFA involvement and college involvement and Pearson Chi Square correlation of 28.50 between SAE involvement and college involvement. The researcher recommends that college recruiters focus their attention on higher involved FFA students rather than just FFA members. It is also recommended that secondary agricultural educators push their students toward higher-level FFA events and leadership roles and that the students' SAE projects be more intentional and require the same outputs across the areas.


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## Chapter 1:

## Introduction

"We see the promise of tomorrow in the incredible young farmers who have joined us today-students who are achieving incredible things through amazing programs like FFA and 4-H," President Trump was quoted saying at the American Farm Bureau Federation Annual Convention (Trump, 2018). President Trump also signed The Farm Bill in 2018, which established an agricultural youth organization coordinator position for 2019. The coordinator motivates students to have careers in agriculture, builds awareness of agriculture, supports school based agricultural education, along with several other tasks (Woodard, 2018). The impact and importance of Agricultural Education should continually me evaluated to discover how we can continually adapt.

Butch Otter, past Governor of Idaho, stated in his 2015 State of the State Speech that education must not end with high school. Otter's goal is to have $60 \%$ of Idaho citizens obtain a post-secondary degree or completion certificate by 2020. Otter said that employers are having a difficult time finding qualified people for job openings because a lot of positions require post-secondary schooling; including welding technicians and positions requiring technical skills. There is a role for Agricultural Education to play in helping students be successful in transitioning from high school to post-secondary education.

Along the same lines of career preparation, the former United States Secretary of Education, Arne Duncan, believes that Career and Technical Education (CTE) is what is needed for every student to graduate from high school and get a post-secondary training or education (Duncan, 2013). Duncan added that CTE courses are hands-on, engaging
and relevant and that's what makes the classes so beneficial for such a diverse student population. Duncan quoted Tony Brannon, the Dean of School of Agriculture at Murray State University, saying that, "Academic education isn't education unless it's vocational, and vocational education isn't education unless it's academic." Even more so, agricultural education is a part of Career and Technical Education (CTE). According to the National FFA Organization, agricultural teachers should follow a three-part model, which consists of classroom instruction, experiential education and being part of a student organization. This means that agricultural education programs must have adequate learning time in the classroom, have Supervised Agricultural Experience (SAE) projects, and participate in the National FFA Organization (National FFA Organization, 2015).

Agricultural Education is the curriculum of agriculture and natural resources at the high school level (Phipps, Osborne, Dyer, \& Ball, 2008). The three goals of agricultural education are to prepare the students for careers in agricultural education, entrepreneurship, and agricultural literacy (Phipps et. al., 2008). Agricultural education follows a three-circle model composed of classroom instruction, FFA, and SAE. The classroom component is based on inquiry-type instructions, FFA is the engagement from what is learned in the classroom and SAE is the implementation of the learning and engagement (National FFA Organization, 2015).

The classroom instruction allows for students to gain knowledge about agriculture and use that knowledge to solve critical thinking problems or come up with plausible solutions (Phipps et. al., 2008). The students can apply the information they have learned in the classroom and apply it to classroom activities such as nursery production, farming, and other agricultural activities.
"FFA is a national organization preparing youth for leadership and careers in the science, business and technology of agriculture" (Idaho FFA Foundation, 2015). Currently the national membership is up to 610,240 members ranging from the age of twelve to twenty-one (Idaho FFA Foundation, 2015). The male to female ratio has changed dramatically since the 1920 's. In the early years, FFA was an exclusively male organization but now the percentage of males to females is $53 \%$ to $47 \%$ (National FFA Organization, 2015, b). The members come from 7,665 different chapters throughout the United States including Puerto Rico and the U.S. Virgin Islands (National FFA Organization, 2015c). Idaho currently has 5,133 FFA members coming from ninety-three different chapters (Idaho FFA Foundation, 2020).

Idaho chapters require their students to be enrolled in secondary agricultural class. (Idaho Professional-Technical Education FFA Association, 2015). To be a part of the National FFA organization, students must be between $7^{\text {th }}$ and $12^{\text {th }}$ grade and be enrolled in an agricultural education program (National FFA Organization, 2015d).

The goal for an FFA member is to have a positive impact on American agriculture by having successful careers, leadership and personal growth (National FFA Organization, 2015). They achieve this by participating in leadership activities, competitions, and conferences. Members may compete in Career Development Events (CDEs). These events are held at the local, state, and national level. There are more than 40 CDE events that members can compete in, such as: livestock judging, agronomy, rangeland assessment, food science, and public speaking (University of Idaho, 2015). Along with the competitions there are conferences held all around the U.S. that are based on real-life situations that help develop self-character and leadership skills (National FFA

Organization, 2015a). Members can earn degrees throughout their years of membership. One must complete a lower level degree in order to advance to the next degree. The orders in which these go from lowest too highest are: Discovery, Greenhand, Chapter, State, and American.

The last component of the three-circle model is SAEs. "A SAE program is a yearround program made up of projects or enterprises where you apply agricultural skills and knowledge taught in the classroom" (Official FFA Manual). Students can choose from six main categories for their project: Entrepreneurship/ownership, placement/internship, research, exploratory, school-based entrepreneurship, and service learning. Entrepreneurship/Ownership is the owning or managing of some input and treating the project like a business financially. Taking an animal to the fair, raising a crop, or custom machinery work are all examples of entrepreneurship. Placement/internship is when the students work for someone else either in a paid position or volunteer their time to gain knowledge and new skills. Examples are a vet clinic, a greenhouse, or an agricultural salesman. Research is an SAE that is more of a scientific investigation. Students can take their project to an agriscience fair and give a report on it. The final category, Exploratory, allows students to interview, job shadow, and go to career fairs to get a feel of different areas of interest before they take on a more in-depth SAE project. School based entrepreneurship is student managed and takes place after school. Examples of this could be raising livestock at school or a school garden. The final category, service learning, "is a student-managed service activity where students are involved in the development of a needs assessment, planning the goals, objectives and budget, implementation of the
activity, promotion and evaluation of a chosen project" (National FFA Organization, 2001e).

## Significance of the Study

This study was conducted to determine the relationship between students who were involved in FFA and SAEs in high school and their college involvement. There has been a steady decline in agricultural programs that are requiring their students to participate in SAEs and FFA (Blickenstaff, Wolf, 2013) even though they are each part of the three-circle model.

## Purpose and Objectives

The purpose of this study was to describe students' involvement in FFA and SAEs during high school and their college involvement within those categories. The objectives of this study were to:

1. Describe students' college involvement
2. Describe students' high school FFA involvement
3. Describe students' high school SAE involvement
4. Describe the relationship between college involvement and FFA involvement
5. Describe the relationship between college involvement and SAE involvement
6. Describe the relationship between college involvement and self-perceived success

This study was particularly important for agricultural education teachers and the College of Agricultural and Life Sciences (CALS) administration. The results could be used for describing students' participation in high school FFA and their decisions toward
attending college. The CALS recruiter could use this data to make decisions on how to focus their efforts for recruiting. Students' involvement in SAEs during high school and how it relates to college involvement could also affect their decision to attend CALS. The results can be used by agricultural education teachers to decide how their requirements of FFA and SAEs could benefit their students' post-secondary schooling.

Blickenstaff and Wolf (2013) identified that 66\% of high school agricultural teachers in Idaho thought that SAEs should be required for all students and even more teachers (86.1\%) believed that all FFA students should have to do an SAE. It was surprising to Blickenstaff and Wolf that only one-third of all teachers require students to conduct an SAE.

Research has also been conducted to describe alternatively certified teachers’ thoughts on SAEs. Robinson and Haynes (2011) found that alternatively certified teachers believed that SAEs were very important and valuable to their students. With the quantitative study of five first year teachers it was found that an SAE would help students in their future careers and/or post-secondary education because of the accountability and responsibilities they have with their projects. For these teachers it is not only important for the students to do a project but to do a project well. To help achieve this goal the teachers must integrate SAEs into the classroom settings. Like other researchers, Robinson and Haynes found that all the teachers would like to have all their students have an SAE, but they say there are barriers that prevent this from happening. Although the results show that teachers think SAEs are great for their students, Robinson and Haynes believe that the teachers can be at fault for the decreasing number of participating SAE students by not requiring them for all students.

Another study was done to look at students' perceptions of soft skills and career decision self-efficacy attained through participation in different types of SAE programs. Haddad and Marx found that programs that require more time, skill, capital and initiative develop greater perceived skill attainment and efficacy through the SAE program (Haddad \& Marx, 2018).

## Summary

Duncan (2013) said that career and technical education is a key component for students to get a post-secondary education. Agricultural education, a part of career and technical education, includes FFA, SAEs, and classroom instruction yet SAEs are not being implemented in many of these programs. Even though SAEs are not being enforced, FFA participation is at an all-time high with more than 600,000 students in the nation (National FFA Organization, 2015b).

In agricultural education, it is important that the teacher knows what is best for their students and what will help them in the future. The purpose of this study is to examine if FFA and SAEs help prepare students for college. This knowledge will help determine what agricultural educators should focus on in their educational requirements and expectations.

## Chapter 2:

## Review of Literature

Chapter two consists of the review of literature pertaining to secondary agricultural education, FFA, and SAEs and their relationships with college success. There have been inconclusive findings with respect to the relationship with FFA and college success. We, the researchers, were unable to find published studies that looked at the relationship between SAEs and college success. Chapter two is also where we further define why college success is comprised of college GPA and college involvement.

## Secondary Agricultural Education and College Success

In 1987, Rudolph and Yoder performed a study related to college success. The study focused on 1,218 former secondary vocational agriculture students and 1,218 students without any vocational agriculture experience. The purpose of Rudolph and Yoder's study was to see if there was a relationship between secondary vocational education and postsecondary success. Factors considered were:

- The number of semesters enrolled in vocational agriculture, Math, English and science
- Grade point average
- Postsecondary aspirations
- College entrance score

The results were used to show that the strongest relationship with college success was postsecondary education aspirations while semesters in vocational education ranked fifth. Rudolph and Yoder concluded that being enrolled in vocational education increased students' odds of being successful in postsecondary education.

Warmbrod and Doerfert (1987), with Ohio State University, performed a study on new first-quarter freshman students in the College of Agriculture at Ohio State during 1981 and 1982. In the study, researchers compared students who were enrolled in vocational agriculture in high school to students who were not enrolled in vocational education. The outcome of the study found that both groups of students had the same odds of graduating college and that the students who were in vocational classes were found to academically perform just as well as the other group of students.

Riesenberg and Lancaster (1990) completed a study on 240 students at the University of Idaho who were secondary agricultural education completers and 1,235 students who did not complete secondary agriculture education. The researchers identified that there was no significant academic difference between the two groups. Smith, Garton, and Kitchel (2010) also looked at the relationship between secondary agricultural education and college academic performance. The target population for this study was freshmen entering the University of Missouri in 1998 and again in 2003. The results were used to show that secondary agriculture education students did not perform academically better than the non-agriculture education students and that a significant relationship did not exist between the level of involvement in secondary agriculture and academic performance.

## FFA Participation and College Success

In 2005, Moore and Braun studied the students in the College of Agricultural and Life Sciences (CALS) at the University of Idaho. The total population was 1,444 students, which excluded students from the School of Family and Consumer Sciences in CALS. The researchers found that students who had received secondary agricultural
education and were in FFA during high school had significantly lower performance rates in college including lower first semester, average semester, and cumulative GPAs compared to students who did not participate in agricultural education or FFA. The researchers also found that students with agricultural education and FFA experience attended fewer semesters leading to graduation and did not switch their majors as much.

Despite several assertions that agricultural experiences lead to lower postsecondary achievements, Ball, Garton and Dyer's (2001) study contradicted the finding of Moore and Braun, 2005. Their study included 664 freshmen entering the College of Agriculture, Food and Natural Resources at the University of Missouri and 442 freshmen enrolled in a college learning and development course during the Fall Semesters of 1997 and 1998. The goal of the study was to describe the influence that participating in a learning community, called Freshman Interest Group (FIG), and agriculture youth organizations (FFA/4-H) had on academic performance and retention on these freshmen students. The results of the study showed that FIG did not make a difference on performance but participating in FFA/4-H had a positive influence on academic performance at the University.

Results from Park and Dyer's (2005) research were used to illustrate that former 4-H and FFA members hold more leadership positions in the College of Agricultural and Life Science (CALS). Park and Dyer surveyed 167 undergraduate students who held leadership positions in CALS. Overall, out of the 167 students, one-third of them were former FFA members.

## Supervised Agricultural Experiences in Secondary Agriculture Education

According to The National FFA Manual (National FFA Organization, 2016) an SAE can be categorized into four subjects: Entrepreneurship, Placement, Research and Experimentation, and Exploratory.

Researchers have found that even though SAEs are included in the three-part model, student participation has been declining for quite some time (Rayfield, \& Moore, 2012) while FFA membership has increased to an astounding number of 600,000 (National FFA Organization, 2015b). There is interest to find out what the relationship is between certain variables and the effects those variables have on student SAE participation. Some of the variables that have been looked at are a limited time, lack of administrator support, limited resources, teachers' lack of knowledge, students' lack of motivation, and teachers' requirements for a SAE (Blickenstaff \& Wolf, 2013).

Blickenstaff and Wolf (2013) completed a study with Idaho agricultural educators to examine students' SAE participation levels, the teachers' perceptions on the support from their school and community, and the characteristics of agricultural education programs and teachers. The researchers identified that $66 \%$ of high school agricultural teachers thought that SAEs should be required for all students and even more teachers (86.1\%) believed that all FFA students should have to do a SAE. The results also were used to show that even though many teachers think SAEs should be required, more than $80 \%$ of them agreed that there could be a successful agricultural program without every student having a SAE. Teachers agreed that there were certain barriers that prevented them from implementing SAEs, such as lack of funding, restricted facilities, time, and the fact that students come and go with the program.

Robinson and Haynes (2011) found that alternatively certified teachers believed that SAEs were very important and valuable to their students. With the quantitative study of the five, first-year teachers, it was evidenced that an SAE would help students in their future careers and/or post-secondary education because of the accountability and responsibilities they have with their projects. For alternatively certified teachers, experience-based learning is important for students because it allows them to gain reallife skills. Like other researchers, Robinson and Haynes found that all the teachers would like to have all their students complete a SAE, but they said there were barriers that prevented this from happening. Although the results show that teachers think SAEs are great for their students, Robinson and Haynes believed that the teachers can be at fault for the decreasing number of participating SAE students by not requiring them for all students.

A common theme found in all the studies was that not many teachers were requiring SAE projects because of certain barriers. Teachers believed that SAEs are important and should be part of the agricultural program but only one-third of teachers required their students to do them. Nationally, SAEs are not enforced as a requirement in agricultural classrooms but doing so would be an easy way to increase SAE participation levels (Blickenstaff \& Wolf, 2013).

## Calculated College Success Scores

There have been several research trials completed that have identified that GPA and social involvement are an indicator of school success (Sparkman, Maulding \& Roberts; Geiser \& Santelices; Seidman; Burton \& Ramist; and Habley, Bloom \& Robbins). In 2012, Habley, Bloom and Robbins conducted research that looked at
increasing persistence for college success with a study of 14,000 students entering a 4year postsecondary school and 23 students entering a 2-year postsecondary school. A hierarchical logistic regression model revealed that High School GPA had a positive relationship with college GPA. ACT scores and Commitment to College also had a positive relationship with college GPA. According to Burton and Ramist (2001) combining SAT scores and high school records provides the best indicator for college success. The study evaluated 100,000 students from almost 1,000 colleges. Seidman (2012), who wrote, College Student Retention: Formula for Student Success, found that students who improved their GPA would be $32 \%$ more likely than lower achieving GPA students to graduate with a four-year degree. A study done in California on 80,000 4-year college graduates showed that High School GPA (HSGPA) was the strongest predictor for college academic disciplines (Geiser \& Santelices, 2007). In addition to these studies, Astin in 1993 found that a student's high school GPA and standardized test scores were the best predictor for their college GPAs.

Research has also demonstrated that social interaction and involvement has a positive impact on college success (Allen \& Nelson (1989); Habley, Bloom \& Robbins (2012); Lotwokski, Robbins, \& Noeth (2004); Cabrea, Nora \& Castaneda (1993); Pascarella \& Terenzini (2005); and Tinto (1993)). Two studies completed in 1989 on single-institutions, report that social interaction has a positive relationship with degree completion (Allen \& Nelson; Cabrera, Nora \& Castaneda). In addition to Habley, Bloom, and Robbin's study in 2012, they also found that in that same hierarchical logistic regression model that social connection has a positive relationship with retention at fouryear institutions. Lotwokski, Robbins and Noeth (2004), completed a study that looked at
the role of academic and nonacademic factors in approving college retention. When the data were analyzed, social involvement, along with many other factors, has a positive relationship with college retention. Two studies conducted in 2005 and 1993 both supported that "socially integrated" or "connected" students at college are more likely to complete their first year of college and complete their college (Pascarella \& Terenzini, 2005; Tinto, 1993).

All the studies listed above relate to success in college. These results have influenced the researchers calculated college involvement formula.

## Theoretical Foundation

The theoretical foundation of this study covers the variables that may influence college involvement. To be a successful agricultural education program, agricultural teachers should follow a three-part model, which consists of the classroom instruction, SAE and FFA (National FFA Manual). For this to happen, agricultural education programs must have adequate learning time in the classroom, student participation in SAEs, and participation in FFA. An SAE is defined 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" (Talbert, Vaughn, Croom, \& Lee, 2007, p. 418) and provides educational value by connecting theory and concepts offered in the agricultural classroom in an understandable context" (Phipps, Osborne, Dyer, \& Ball, 2008).

As mentioned in the review of literature, there have been several studies that have looked at secondary agricultural education and FFA and their relationship with college success. Touchstone and Riesenberg (1997) came up with a model that had several
variables that lead to college success, Figure 2.1. Touchstone and Riesenberg used this model in their study and found that there was no significant relationship between secondary agricultural education and college success.

Figure 2.1. Riesenberg and Touchstone’s College Success Visual


## Conceptual Framework

As defined by Kitchel and Ball (2014), a conceptual framework is "a visual diagram or description indicating the relationships between or among variables" (p. 190). It should represent the concepts, expectations, beliefs, and theories that make up the study.

This study's conceptual framework, Figure 2.2, was influenced by Touchstone's model, specifically FFA membership, in Figure 2.1. The researcher decided to look at factors FFA participation, SAE participation, self-perceived success and their relationships to their college involvement. A self-perceived score is used to evaluate how successful a student feels they have been in college. The two factors, FFA and SAEs,
were based off the participation of these activities during secondary agricultural education. The factor of student's personal success was based off the question that asked how successful the student thought they were in college.

Figure 2.2. Conceptual Framework


## Summary

There have been studies that have investigated the relationship with FFA and college success and provide inconclusive evidence to support FFA and college success (Ball, Garton \& Dyer, 2001; Moore \& Braun, 2005; Park \& Dyer, 2005). Researchers have found that there have not been consistent findings relating to the association between secondary agricultural education and college success (Reisenberg \& Lancaster, 1990; Rudolph \& Yoder, 1987; Smith, Garton \& Kitchel, 2010; Warmbrod \& Doerfert, 1987). There has been little research done that looked at SAEs and college success; research has just shown that SAEs are not being implemented in agricultural education
classes but would most likely be beneficial for the students (Blickenstaff \& Wolf, 2013; Rayfield, \& Moore, 2012; Robinson \& Haynes, 2011).

## Chapter 3:

## Methods

This was a descriptive, quantitative study that looked at the relationship between students who are actively involved in FFA and SAEs in high school and their college involvement. The study population consisted of 211 of students from the College of Agricultural and Life Sciences at the University of Idaho. The questionnaire was sent out to 782 students, 236 questionnaires were completed, and 211 questionnaires were usable. The questionnaire was administered via Qualtrics with results being analyzed using the Statistical Package for Social Sciences (SPSS), version 22.

## Purpose and Objectives

The purpose of this study was to describe students' involvement in FFA and SAEs during high school and their college involvement within those categories. The objectives of this study were to:

1. Describe students' college involvement
2. Describe students' high school FFA involvement
3. Describe students' high school SAE involvement
4. Describe the relationship between college involvement and FFA involvement
5. Describe the relationship between college involvement and SAE involvement
6. Describe the relationship between college involvement and self-perceived success

## Study Population

The participants of this study were students attending the University of Idaho in the College of Agricultural and Life Sciences (CALS) in 2015. The college was composed of seven departments: Agricultural Economics and Rural Sociology, Agricultural Extension and Education, Animal and Veterinary Science, Biological and Agricultural Engineering, Family and Consumer Sciences, Food Science, and Plant, Soil and Entomological Sciences. Surveying this group of students gave the researchers an overview of how and if agricultural education has an influence on CALS students' academic performance. The total population for the study, which consisted of freshmen, sophomores, juniors, and seniors, was 782.

## Instrumentation

The instrument used in this study was researcher-created. It was generated to address all the objectives in the study with adequate information.

## Questionnaire content

This study's questionnaire (see Appendix A) was created and administered online with Qualtrics. The questionnaire was organized into four main categories: FFA, SAE, 4-H, and college involvement.

The participants first answered a question that allowed them to assess their own college success on a scale from one to ten. This question was put at the top because it is interesting and it is a question that will catch their attention. Questionnaires should start off with the most interesting questions and end with the demographic questions (Dillman, D. A., Smyth, J. D., \& Christian, L. M., 2009).

Following that question was the section that focused on how involved the students were in high school FFA. To determine this the researcher asked how many FFA activities they participated in, if they held any officer positions and how many years they were in FFA. Given the college involvement formula, which includes FFA involvement, the researcher was able to plug in this information to help complete the student's involvement formula.

The second block of questions dealt with SAEs. In these questions the students were asked to identify if their SAE projects related to their college major and a college internship, if they had one. These questions were asked to assess if SAEs had an influence on choosing CALS for their major and if there were any relationships with their involvement in college.

Although the study only focused on FFA and SAEs the researcher also sought to describe relationships between 4-H and college involvement through the questionnaire. This questionnaire combined questions from 4-H from a separate study. The studies were combined to reduce fatigue by participants. This block of questions was formatted the same way as the FFA involvement section and asked similar questions, which assessed the student's 4-H involvement.

The final section of questions covered the student's current University of Idaho involvement. The first three questions sought out to find the student's involvement in clubs at the University of Idaho, the next question looked at class attendance, and the final two examined their work history and if their internships were related to a SAE category.

## Validity

Validity is the extent to which an instrument measured what it claimed to measure (Ary, Jacobs, Razavieh, \& Sorensen, 2009). The researcher used a panel of experts to increase content validity and face validity. Content validity measured the researcher asked questions that they intended to ask, meaning that each question measured what they wanted it to measure. This study's content was college involvement. The next type of validity the panel helped increase was face validity. Face validity measured the questionnaire at the surface level. The panel of experts made sure that nothing seemed confusing with the questionnaire and that the questions were portrayed correctly. The panel consisted of two University of Idaho College of Agricultural and Life Sciences faculty members and one Washington State University faculty member. The questionnaire was electronically sent to the panel of experts just like a participant would see it. The panel of experts made comments and suggestions for all the questions in the questionnaire, checked the operationalization of the constructs, and made refinements when necessary.

External validity is the extent to which the results can be generalized beyond itself (Leedy \& Ormrod, 2013). External validity is supported using proximal similarities by describing characteristics of the population and content about the questionnaire.

## Reliability

"Reliability is the degree to which a set of items consistently measure the same thing across respondents and environments" (Ary, Jacobs, Razavieh, \& Sorenson, 2006). Ary, Jacobs, Razavieh and Sorenson have concluded that no test is error free. They noted that every score consists of two components: the true score plus some error of
measurement. This study's researchers were not concerned with calculating the reliability because the variables in the questionnaire were very stable and wouldn't change over time.

## Population Frames

The list of all the students' names and email addresses were obtained from the CALS administrative office. The information provided was categorized by college and then by school grade level. The population frame had a few errors. First, the researchers discovered that some of the participants no longer attended the University of Idaho, so the researchers deleted any student who had a " 0 " for both Fall 2015 and Institutional GPA. Second, when a test email was sent out, it went into the "Clutter" folder.

## Data Collection

Data was collected using the Tailored Design Method (Dillman et al, 2009). This method contacted the participants by email up to five times: a brief pre-notice email, the questionnaire, a thank you or reminder email, a replacement survey, and a final reminder or thank you.

The surveys were sent out in a timely matter. The first pre-notice email was sent out May 4, 2016. The questionnaire was then sent out one week later. Six days after the survey was sent out, the non-respondents received a reminder email and the participants that completed the survey received a thank-you email. The fourth email was sent out five days after the reminder and the final email was sent out ten days after the replacement survey. Data were entered into a program as soon as the researchers received the completed surveys.

Table 3. 1
Data Collection Timeline

| Contact | Content | Sent Date | Number of <br> Recipients |
| :---: | :---: | :---: | :---: |
| 1 | Pre-Notice Email | May 4, 2016 | 782 |
| 2 | Initial Contact Email | May 10, 2016 | 782 |
| 3 | First Reminder/ Thank-You Email | May 15, 2016 | 782 |
| 4 | $2^{\text {nd }}$Reminder/ Thank-You Email | May 19, 2016 | 782 |
| 5 | Final Reminder/ Thank-You Email | May 29, 2016 | 782 |

Incentives for completing the survey were provided by the CALS academic office. The prizes were five, $\$ 40$ gift cards to the Vandal Store. The winners were randomly chosen. Since there was a non-response rate of over $20 \%$ the researchers compared late respondents versus on time respondents to make sure there was not a significant difference between the responses (Linder, Murphy, \& Briers, 2001).

## Data Analysis

Descriptive data were reported using frequencies, means, and standard deviations. Categories for FFA and SAE involvement were created once data were received using natural break points to create these groups (low, moderate, high). A priori, a completion rate of $70 \%$ was kept in the data set, but respondents that didn't complete at least $70 \%$ were depleted from the data set. But upon receiving we decided to only keep responses that were $100 \%$ complete because there were so many fill-in-the-blank responses. This
change omitted six responses. The shortest time frame that the questionnaire was completed was twelve seconds; the longest was 15.5 hours, with the average being thirteen minutes. The mode was 6.3 minutes.

## Operational Definitions:

College involvement $=(\#$ of events attended per academic year $)+10(\#$ of officer positions) +10 (\# of internships).

High: > 30-at least one activity each week
Medium: 15-29- between one activity every other week and one activity each week

Low: $<14$ - one or less activity every other week
FFA involvement $=(\#$ of years in FFA $)+(\#$ of years being county fair exhibitor $)+2(\#$ times competing at a district level CDE $)+2(\#$ of times competing at a state level CDE) +2 (\# of times competing at a national level CDE) +2 (\# of times attending SLC) $+2(\#$ of times attending National FFA convention) +3 (serving as a chapter officer) +3 (serving as a state officer $)+2($ attending WLC $)+2($ attending $212 / 230$ conference $)+($ attending social events at the chapter level).

High: > 20
Medium: 10-19
Low: $<0-9$
SAE Involvement $=$ Yes or no
SAE involvement was put into two categories. "Yes" they had an SAE project or "No"

## Limitations to the Study

The audience that reads this study should be aware of the limitations to the study. The first limitation was that the study population only focused on students in CALS at the University of Idaho. The study represents a cohort done at a certain point in time. If this study were to be done throughout different times of the school year, results would vary. This means that the audience should be aware when generalizing the data.

## Summary

This study was survey research to describe FFA and SAE involvement in high school as they relate to college involvement. The questionnaire allowed information to be collected and analyzed for further information about the importance of participation in FFA and SAE on college involvement. The population for the study consisted of students from CALS at the University of Idaho. Data came from the students and the frame came from the CALS academic programs office.

## Chapter 4:

## Results

The literature of the previous chapters provided a base point for the current research study. The results from the study are presented in chapter 4 by the objectives of the study.

## Purpose and Objectives

The purpose of this study was to describe students' involvement in FFA and SAEs during high school and their college involvement within those categories. The objectives of this study were to:

1. Describe students' college involvement.
2. Describe students' high school FFA involvement.
3. Describe students' high school SAE involvement.
4. Describe the relationship between college involvement and FFA involvement.
5. Describe the relationship between college involvement and SAE involvement.
6. Describe the relationship between college involvement and self-perceived success.

## Response Rates

The response rate for this study's overall population was $30 \%$. Out of the 782 surveys that were emailed out, 236 surveys were started and only 211 were completed, yielding is a $30 \%$ response rate (Table 4.1).

Table 4. 1
Study Response Rate

| Populations <br> Response | Number of | Usable | Total | Usable |
| :--- | :---: | :--- | :--- | :---: |
|  | Respondents | Responses | Population | Rate (\%) |
| CALS Students | 236 | 211 | 782 | 30 |

## Objective 1: Describe students' college involvement

Objective 1 focused on figuring out how much students were involved with at the University of Idaho. Six questions were asked to address this specific objective.

Table 4.2
Which club(s) are you a member of this academic school year? (select all that apply)

| Club | Frequency of respondents who are members ( $\mathrm{n}=211$ ) | Percent of the Respondents |
| :---: | :---: | :---: |
| Alpha Gamma Rho Fraternity | 10 | 4.7\% |
| CALS Ambassador | 23 | 10.9\% |
| Systems Management | 4 | 1.9\% |
| CALS Student Affairs Council (CALSAC) | 12 | 5.7\% |
| Block and Bridle | 12 | 5.7\% |
| Collegiate FFA (CFFA) | 37 | 17.5\% |
| Collegiate Farm Bureau | 14 | 6.6\% |
| Collegiate 4-H | 6 | 2.8\% |
| Collegiate FCCLA | 1 | 0.5\% |
| Dairy Club | 10 | 4.7\% |
| Entomology Club | 0 | 0\% |
| Farmhouse Fraternity | 2 | 0.9\% |
| Food and Nutrition Club | 10 | 4.7\% |
| Food Science Club | 4 | 1.9\% |
| Horse Polo Club | 5 | 2.3\% |
| International Textiles and Apparel Assoc. | 1 | 0.5\% |
| Livestock Judging Club | 8 | 3.8\% |
| Assoc. for the Education of Young Children | 1 | 0.5\% |
| Phi Upsilon Omicron | 5 | 2.3\% |
| Plant Soil Science Club | 8 | 3.8\% |
| Pre-Veterinary Club | 16 | 7.6\% |
| Range Club | 3 | 1.4\% |
| Rodeo Club | 1 | 0.5\% |
| Student Idaho Cattle Association | 17 | 8.1\% |
| Sigma Alpha | 19 | 9.0\% |
| Soils Stewards Club | 2 | 0.9\% |

Students could choose all clubs that applied to them. The clubs listed are hosted in CALS and listed on the website. The club with the most students was Collegiate FFA
(CFFA). Thirty-seven students (17.5\%) out of 211 students are part of the group.

| Table 4. 3 <br> College involvement |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |
|  | Minimum <br> Value | Maximum <br> Value | Mean | Standard <br> Deviation | Responses

Out of the 236 participants that completed this survey, 190 students responded to this question. The minimum number of events that a student attended was zero and the maximum value was 200 . There was no limit to the number of events they could respond with the questionnaire. The mean number of events attended was 13.9 and the median was six.

The participants could choose between the numbers $0-5$ on how many officer positions they have held. Out of the 187 responses, the average positions a student held were one or less.

Table 4.4
How often do you attend your classes?

| Answer | Number of <br> Respondents | Percent $\%$ |
| :---: | :---: | :---: |
| $100 \%$ of the Time | 84 | $40 \%$ |
| $90 \%$ of the Time | 106 | $50 \%$ |
| $80 \%$ of the Time | 16 | $8 \%$ |
| $70 \%$ of the Time | 3 | $1 \%$ |
| Less than $70 \%$ of the Time | 2 | $1 \%$ |

$\mathrm{n}=211$
Table 4.4 gives the results for the questions "How often do you attend your classes?" The participants were given five options to choose from. The answer " $90 \%$ of the time" had the highest percentage at $50 \%$ while " $100 \%$ of the time" followed with $40 \%$ of the participants choosing this answer. " $70 \%$ of the time" and "less than $70 \%$ " of the time" both only had $1 \%$ of the respondents choose these options. $8 \%$ of the participants chose " $80 \%$ of the time."

Figure 4.1
Have you had an internship while attending the University of Idaho?


Most respondents answered that they did not have an internship while attending the University of Idaho. The remainder of the students at $39 \%$ responded that they had an internship while attending the University of Idaho.

Table 4.5
In what category or categories were your internships? (select all that apply)

| Answer | Number of <br> Respondents | Percentage |
| :---: | :---: | :---: |
| Plant Systems | 13 | $16 \%$ |
| Animal Systems | 24 | $29 \%$ |
| Ag Power, Structure, and |  |  |
| Mechanics |  |  |
| Food Science | 3 | $4 \%$ |
| Social Systems <br> Environment and Natural <br> Resources <br> Other | 10 | $12 \%$ |

$\mathrm{n}=113$
If the participants answered that they had an internship while attending the University of Idaho they were then directed to the question concerning the categories in which their internships belong. The participants were allowed to choose all the categories that applied to them. The categories with the highest responses were "other" with 51 responses. Animal systems followed with 24 responses at $29 \%$. The category with the least responses was "Ag Power, Structure, and Mechanics," with only 3 responses. The population was not 83 because the respondents could have had more than one internship, or their internship could have fit into two or more categories.

A score was calculated for each student to represent their college involvement using the formula found in Chapter 3 of this document. Scores ranged from 0-220. The scores were then grouped into categories titled low, medium, and high. For the groups of

College Social Involvement, there were 130 students grouped into the low category, 36 students in the medium category, and 69 students in the high category.

## Objective 2: Describe students' high school FFA involvement

Objective 2 was measured using six survey questions to help describe students' high school FFA involvement. Listed below are each question from the survey and the results.

Figure 4.2
Did you take any Agricultural Education courses offered in the high school you attended?


Figure 4.2 addresses Objective 2. Fifty-seven percent of the respondents said that Agricultural Education courses were not offered at their high school. The remaining respondents, 91 students, answered that Agricultural Education courses were offered at their high school.

Figure 4.3
Number of Agricultural Education semesters a respondent completed


If students responded that they took Agricultural Education courses at their high school from Figure 4.2, they were directed to the question in Figure 4.3. The most semesters the students could choose were 8 semesters. The option with the most responses was 8 semesters, which equals 4 years of high school and completing 5 semesters was the least chosen option. Figure 4.3 displays the average number of semesters that the 84 respondents responded to was 5.89 semesters, which is more than 2 full years of high school.

Figure 4.4
Were you an FFA member?


Out of the 211 participants, 92 students responded that they were FFA members and 118 students responded that they were not FFA members.

The next question asked how many years the student was a member of the National FFA Organization. The participants were able to choose from a range of 1 year to 7 years. The average was 4.26 years in FFA with a variance of 2.03 years.

Table 4.6
FFA activities completed in high school. (select all that apply)

| Answer | Number of <br> Respondents | Percentage |
| :---: | :---: | :---: |
| County Fair Exhibitor | 73 | $79 \%$ |
| District Level CDE | 77 | $84 \%$ |
| State Level CDE | 66 | $72 \%$ |
| National Level CDE | 26 | $28 \%$ |
| State FFA Convention | 76 | $83 \%$ |
| National FFA Convention | 56 | $61 \%$ |
| Chapter Officer | 73 | $79 \%$ |
| State Officer | 12 | $13 \%$ |
| Washington State Leadership | 28 | $30 \%$ |
| Conference | 47 | $51 \%$ |
| 212/360 Leadership | 80 | $87 \%$ |
| Conference |  | 92 |
| Chapter Level Social Event |  |  |
| Total Responses |  |  |

The table above displays what the respondents participated in while attending high school. They chose all the activities that applied to them. District level CDE, State FFA Convention, and Chapter Level Social Event were the highest attended events all in the $80 \%$ range. Following this range was the $70 \%$ range were Country Fair Exhibitor, State Level CDE, and Chapter Officer. The least activity participated in was a State Officer position at $13 \%$.

Table 4.7
Indicate the highest FFA degree you received. (select one)

| Answer | Number of <br> Respondents | Percentage |
| :---: | :---: | :---: |
| Discovery | 3 | $3 \%$ |
| Greenhand | 3 | $3 \%$ |
| Chapter | 20 | $23 \%$ |
| State | 37 | $43 \%$ |
| American | 24 | $28 \%$ |
| Total | 87 | $100 \%$ |

Participants that were FFA members were then asked what the highest FFA degree they received. Having a State Degree was the most common at $43 \%$ followed by an American Degree at $28 \%$. The least common degrees were Discovery and Greenhand at $3 \%$.

An FFA Involvement score was created for each student using the formula in Chapter 3 of this document. The formula determined a weighted score for each student and then that score was grouped into low, medium, or high participation. There were 150 respondents who had "low" involvement. There were 34 students who belong in the "medium" involvement group. There were 44 students who were grouped as "high" involvement. The range of FFA Involvement scores was from 0-31.

## Objective 3: Describe students' high school SAE involvement

Objective 3 asked seven questions to help describe students' high school SAE involvement. If students answered "no" to having an SAE, they automatically bypassed the set of SAE questions.

Table 4.8
Did you have a Supervised Agricultural Experience (SAE) project in high school?

| Answer | Number of <br> Respondents | Percentage |
| :---: | :---: | :---: |
| Yes | 82 | $89 \%$ |
| No | 10 | $11 \%$ |
| Total | 92 | $100 \%$ |

Objective 3 begins with asking if the participants who were FFA members had an SAE project while attending high school. $89 \%$ of the participants said did have an SAE project was $11 \%$ responded that they were not.

Table 4.9
Were SAE projects required for your Agricultural Education class?

| Answer | Number of <br> Respondents | Percentage |
| :---: | :---: | :---: |
| Yes | 45 | $55 \%$ |
| No | 37 | $45 \%$ |
| Total | 82 | $100 \%$ |

Table 4.9 shows how many students had an SAE project in high school while table 4.10 shows if SAE projects were required in their Agricultural Education classes. The majority of students answered that SAE projects were required. The remaining 45\% of the students responded that they were not required.

Table 4. 10
Were SAEs graded as part of class?

| Answer | Number of <br> Respondents | Percentage |
| :---: | :---: | :---: |
| Yes | 32 | $39 \%$ |
| No | 50 | $61 \%$ |
| Total | 82 | $100 \%$ |

As stated before, not all teachers required their students to have an SAE project. Table 4.11 displays the results on whether or not SAEs are graded as part of class. Out of the 82 respondents, 50 responded that they were not graded and 32 responded that they were graded. This means that students may have an SAE project but only $39 \%$ of those projects are graded as part of class.

Table 4. 11
What type(s) were your SAE projects? (select all that apply)

| Answer | Number of <br> Respondents | Percentage |
| :---: | :---: | :---: |
| Entrepreneurship | 62 | $77 \%$ |
| Placement (Paid or Unpaid) | 40 | $49 \%$ |
| Research | 8 | $10 \%$ |
| Exploratory | 13 | $16 \%$ |

The participants that responded they had an SAE project were directed to the question "What type(s) were your SAE projects?" The participants had the opportunity to choose all the types that applied to them. The project that had the highest percentage was Entrepreneurship and Research was the least type of project that students chose at $10 \%$.

Table 4. 12
Which category(s) were your SAE projects in? (select all that apply)

| Answer | Number of <br> Respondents | Percentage |
| :---: | :---: | :---: |
| Plant Systems | 21 | $26 \%$ |
| Animal Systems | 74 | $90 \%$ |
| Ag Power, Structure, and |  |  |
| Mechanics | 10 | $12 \%$ |
| Food Science | 3 | $4 \%$ |
| Social Systems | 5 | $6 \%$ |
| Environment and Natural |  |  |
| Resources | 8 | $10 \%$ |

SAE projects are broken down into six categories. Table 4.13 lists the categories and the respondents chose which categories their projects were in. Animal systems is the top category at $90 \%$. The closest category to this is Plant Systems at only $26 \%$. The category with the fewest responses is Food Science at $4 \%$.

Table 4. 13
Was your SAE program related to your current college major?

| Answer | Number of <br> Respondents | Percentage |
| :---: | :---: | :---: |
| Yes | 45 | $55 \%$ |
| No | 37 | $45 \%$ |
| Total | 82 | $100 \%$ |

If the participants chose that they had an SAE project they were then asked if their project was related to their current college major. Table 4.13 concludes that $55 \%$ of the
students responded that their projects were related to their current major while $45 \%$ responded that their SAE projects didn't have to do with their major.
Table 4. 14


The final question addressed for objective 3 was for the respondents to indicate their level of agreement to each statement. For the first statement: "My SAE project influenced me to come to the U of I," the most popular response was "Agree" with 26 students followed by "Disagree" with 20 students, which is a $7.3 \%$ difference. The majority of the respondents chose "agree" to the second statement: "My SAE project had an influence on deciding my major." The final statement, "My SAE project had an influence on my internship placement," had "Disagree, Agree, and N/A" all within 5 students of each other.

## Objective 4: Describe the relationship between college involvement and FFA involvement

Objective 4 used the respondents' calculated college involvement score, formula shown in Chapter 3, and compared it to their FFA involvement. The college involvement score was put into three categories; low, medium, and high. Table 4.15 and Figure 4.5 display the correlations between the two.

Table 4. 15
Correlations between college involvement and FFA involvement

|  |  | College Social Involvement |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Low | Medium | High | Total |  |
| FFA | Low | 98 | 24 | 28 | 150 |
|  | Medium | 14 | 5 | 15 | 34 |
|  |  | 13 | 6 | 25 | 44 |

There were 228 valid participant responses that the Pearson Correlation used to calculate the correlation between college involvement and FFA involvement, which was 0.345. According to the Davis (1971), this is a moderate correlation between the 228 participant responses.

## Figure 4.5

Categorical Cross tabulation FFA involvement and college involvement


The figure above shows that many students who had Low FFA involvement also had low college involvement. When students had Medium FFA involvement, most of those students also had Low college involvement. Highly involved FFA student had High FFA involvement, they had similar odds of being in the Low, Medium, or High college involvement category.

## Objective 5: Describe the relationship between college involvement and SAE involvement

Objective 5 used the respondents' calculated college involvement score, formula shown in Chapter 3, and compared it to their SAE involvement. Table 4.16 and Figure 4.6 display the results for the correlations between the two.

Table 4.16

College Involvement Categorical Cross tabulation

|  |  | Low | Medium | High | Total |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Did you have <br> a SAE project <br> in high school | Yes | 102 | 23 | 28 | 153 |
| $\quad$ No | 28 | 13 | 41 | 82 |  |
| Total |  | 130 | 36 | 69 | 235 |

Table 4.16 shows that there were 102 respondents that answered "yes" to having an SAE project in high school and were in the Low College Involvement category. Of the other respondents that answered "yes," there were 23 in the Medium category and 28 in the High category. The respondents that did not have an SAE project in high school had 28 respondents in the Low category, 13 in the Medium, and 41 in the High.

Figure 4.6

Categorical Cross tabulation SAE involvement and college involvement


Figure 4.6 shows that the majority of students that had an SAE project in high school were in the Low category for college involvement. For students that did not have an SAE project in high school, the majority of the students were in the High college involvement category. The Pearson Chi-Square relation value was 28.50.

Objective 6: Describe the relationship between college involvement and selfperceived success

Objective 6 used the respondents calculated college involvement score, formula shown in chapter 3, and compared it to their self-perceived success, which was on a scale from 1-10.

Table 4.17

Descriptive Statistics of College Involvement and self-perceived success

| College <br> Involvement <br> Category | Mean score of Self- <br> Perceived Success | Number of <br> Respondents | Std. Deviation |
| :---: | :---: | :---: | :---: |
| Low | 7.83 | 115 | 1.54 |
| Medium | 7.91 | 35 | 1.04 |
| High | 8.19 | 69 | 1.20 |
| Total | 7.96 | 219 | 1.37 |

Note: Respondents selected a number between 1-10 to show how successful they felt they were in college.

Eta Squared was used to measure the association between the two variables. This was used because there were a lot of assumptions when calculating the correlations between these two variables. Eta squared is a measure of effect size, so the researchers are able to compare effects of grouping variables together. The eta for these two variables was . 013 .

## Chapter 5: Conclusions, Discussion, and Recommendations

## Purpose and Objectives

The purpose of this study was to describe students' involvement in FFA and SAEs during high school and their college involvement within those categories. The objectives of this study were to:

1. Describe students' college involvement
2. Describe students' high school FFA involvement
3. Describe students' high school SAE involvement
4. Describe the relationship between college involvement and FFA involvement
5. Describe the relationship between college involvement and SAE involvement
6. Describe the relationship between college involvement and self-perceived success

## Conclusions and Discussion for Objective 1:

Objective 1 of the study focused on describing students' college involvement. The total population for CALS was 782 students and only $30 \%$ (211) of the population had usable responses. CALS offered 26 clubs for students to participate in; the club with the most members was CFFA with 37 members, which was only $17 \%$ of the sample. Several of the clubs only had 1-2 members who responded to the survey and this could mean several things since there was only a $30 \%$ response rate. First, the club could have just started and was building up its members. Second, there was no interest in the clubs. Third, the students in the club did not complete the questionnaire. I would have expected
that the Dairy Club had more respondents because of the advertisements I saw in the communications from the college.

On average, the students that were a member of a club attended 13.9 events per year. That is more than one event per academic month. Since most clubs usually have one meeting per month, these results indicate that students participated in more than just club meetings. The highest number of events attended was 200 . That would mean that the participant went to an event almost every day of the school year. This may have been a typo or misunderstanding of the question, or an exaggeration. The participants were then asked how many officer/committee positions they held. The average number of officer/committee positions that a participant held was less than one (0.80). This could mean that most the participants held a position or several participants held multiple positions.

There were positive results from the question that asked about class attendance. $90 \%$ of the participants attended class $90-100 \%$ of the time. Academically, this shows that students are very involved with the University of Idaho. On the other side though, only $39 \%$ of the participants had an internship while attending the U of I. This does not show a strong positive correlation between class attendances and having an internship, which could imply that student's academic involvement did not have to do with internships.

College involvement is being dedicated and actively involved outside of the classroom. Just being a member of a group does not mean that you are actually participating in it. This is similar to being an FFA member in high school. Often a student can be a member of FFA but doesn't actually take a part in any competitions, activities,
or leadership roles. Applications/Scholarships should consider having requirements of attending a minimum numbers of events/activities a year to make it accurately gauge participation instead of just asking if a student was or was not a member of FFA.

Members from different chapters have varying levels of participation.

## Conclusions and Discussion for Objective 2:

Objective 2 looked at High School FFA involvement. Interestingly only 42\% of the CALS participants took offered Agricultural Education classes in High School. Some schools may not have offered Agricultural Education classes so some students may not have had the option to take a class while other students may have been required to take a class. On average, the students that took Agricultural Education classes, took almost six semesters of classes out of eight.

The next question asked if the participants were FFA members. $43 \%$ of the participants were FFA members, which is $1 \%$ higher than the percentage of students that took Agricultural Education classes. The participants that responded "yes" to being an FFA member were then asked how many years were they a part of the National FFA organization. The mean number of years was 4.26 years. The question did not expand on which years those were, so we do not know whether they were mainly junior high, high school, or college.

The participants that were FFA members were then directed to respond to the FFA activities that they participated in, with the option to choose "all that apply." The top three events were Chapter Level Social Event (87\%), District Level CDE (84\%), and State FFA Convention (83\%). The activity with the lowest level of involvement was State Officer (13\%).

FFA members earn Degrees throughout the years that they are a part of the organization. One must complete a lower level degree in order to advance to the next degree. The order in which these go from lowest to highest are: Discovery, Greenhand, Chapter, State, and American. The participants were asked what was the highest Degree that they earned. State was the highest at (43\%) and the two lowest were Discovery (3\%) and Greenhand (3\%). This could indicate that the majority of FFA members continued to earn Degrees through the years that they were FFA members.

## Conclusions and Discussion for Objective 3:

Objective 3 was to describe students' high school SAE involvement. According to the Three Circle Model an SAE is the implementation of the learning and engagement (National FFA Organization, 2015). $89 \%$ of the participants that were FFA members answered that they had an SAE project. These participants then answered whether or not SAEs were required in their Agricultural Education class. $55 \%$ of the population responded yes, $45 \%$ no. This indicates that even though SAE's weren't required, students still chose to do them. These same participants answered whether or not their SAEs were graded as part of their class grade. $39 \%$ responded "yes," $61 \%$ "no." From there, the participants answered what type(s) were their SAE projects. The category with the highest percent was Entrepreneurship (77\%) and the lowest was Research (10\%). The SAEs can also be put into categories. The category that had the most responses was Animal Systems and the category with the least responses was Food Science. The participants answered whether their SAE program related to their current college major. $55 \%$ responded "yes" and $45 \%$ responded "no." The participants were then directed to answer their level of agreement to each statement ranging from Strongly disagree,

Disagree, Agree, Strongly agree, or N/A. "Agree" was the mean answer for all the questions that addressed SAEs and its influence on a college major and internship placement, refer to table 4.20. It was interesting comparing the total number of students for Agree and Strongly Agree, within the three statements, that "My SAE project had an influence on deciding my major" had the most students whereas, "My SAE The researcher have thought that if their major was influenced by their SAE project then their internship would be too since it seems like you chose an internship that relates to your major to give you experience in that field of study before you graduate and get a job.

SAEs are also part of experiential learning to prepare students for careers in agriculture. This could mean that their SAEs may be related to their college courses and degrees. Maybe there wasn't this kind of relationship because their SAEs weren't rigorous enough or their teachers didn't do a good job at explaining what the purpose of an SAE is. SAE involvement is not as easily described as FFA involvement. Future questions should be asked about types, kinds, sizes and scopes of SAEs to gather uniform data.

## Conclusions and Discussion for Objective 4

Objective 4 was to describe the relationship between college involvement and FFA involvement. A college involvement score was calculated from all the questions that pertained to college involvement.

The Pearson correlation between FFA involvement and College Involvement was 0.345 , meaning there was only a moderate correlation. I was surprised because I assumed that if a student were very involved in high school they would still be involved when they went on to college. There could be several factors on why there wasn't a higher
correlation between the two. One, the student noticed that college was harder academically and decided they needed to focus on their schoolwork rather than being socially involved. Two, the student may have got a job during college to help pay their way through school and didn't have time to be socially involved. Three, the student could have been a freshman in college and was not aware of all the activities that the university offered. Four, the formulas used to calculate the college involvement scores did not accurately show how involved the student was. Again, the student could have been a freshman, was in several clubs but didn't have any leadership roles due to lack of experience. Having an officer position gave the students more points in their final score. Five, in high school the student could have went to several FFA events but didn't actually compete and/or didn't have any leadership roles; therefore those experiences may not have influenced them to be involved when they went to college. Six, the student may have been required to be a member and participate in FFA while in high school and when they went to college they weren't required to be involved in anything. Seven, on the other hand, maybe the student was not highly involved in FFA but when they came to college they joined the Greek system and were required to be involved in certain activities and organizations. Previous research found that being involved in FFA did not make you more successful in college, which college involvement is defined as part

## Conclusions and Discussion for Objective 5:

Objective 5 was to describe the relationship between college involvement and SAE involvement. The results showed that the majority of students had an SAE project but were in the Low category for being involved in college. Could this be because their SAE experiences were lame and didn't have a lot of rigor or relevance to agriculture?

Maybe the SAEs need to be more career-related so when they graduate high school they have an idea what they want to major in when they go to college.

Some Ag programs may require all students to have an SAE project in their class or even just FFA members. If this is the case, the student may not be choosing to be involved but rather fulfilling their class requirements. So when they attend college they aren't participating in anything because it is not required. On the other hand, the students could have chosen to take an SAE project in high school but once they got to college, they became too busy with schoolwork.

The data showed that most students had an SAE project, which is not surprising because the questionnaire was only sent out to CALS students rather than the whole University of Idaho.

## Conclusions and Discussion for Objective 6:

Objective 6 was to describe the relationship between college involvement and self-perceived success. Self-perceived success was on a scale from 1 to 10, one being the least successful and ten being the most successful. The standard deviation between all the categories of High, Medium, and Low was 1.37. The students felt successful no matter their level of college involvement.

There could be several possibilities for this low correlation.

1. The student didn't think that their "success" was related to college social involvement. They could think of it just as a high GPA score or the level of classes they are taking.
2. The student did not want to admit that they felt they were unsuccessful.
3. Attending class is part of the college involvement score and it could be that a student doesn't attend class often but they still have a good grade in the class because attendance is not part of the class grade.
4. They may just be part of clubs with no leadership roles.
5. The student could be focused on keeping up with schoolwork and having a job to pay for college that they don't have time for other activities in college.
6. The student could already have several Greek life activities that are not accounted for in the questionnaire.
7. The student may not be involved with a lot because they go home whenever they get a chance to help their family business, such as a farming and ranching.

## Recommendations for College Recruiters

From the results, the researcher believed it would be a better use of recruiter's time to not just focus you time on kids that are involved in FFA but more the higher level-achieving members. Just because the student was in FFA, it doesn't mean they participate in anything and could even end up not being involved in college. The college application could go into more detail about FFA to figure out if they were highly involved and then gear their recruitment towards those students. Recruiters could also attend State and National FFA events to reach out to students who are competing at those events and students who hold leadership positions there.

The researcher found that there were differences when describing SAE involvement and there wasn't a common language when measuring the value of an SAE.

Recruiters may consider either determining metrics the type and size of an SAE for which to evaluate student performance, or not use this variable as a criterion to recruit students.

## Recommendations for Agricultural Teachers

The researcher would recommend you encourage your students to be highly involved in FFA rather than just a member. Being a low involved student could actually mean that they're going to be lowly involved in college involvement and that not something colleges are looking for. College recruiters may start only looking to recruit very active FFA students rather than just members, so your students need to know this in hopes that it would encourage them to be more involved while attending college.

Something else for the teachers to consider, would be pushing their students to do a more challenging SAE project. This is because there was only a small relationship between having an SAE project and college involvement. This could have been because the students who responded to the survey had easy SAE projects and they didn't have to put any time or effort into their projects, which in return did not benefit them with their college involvement.

## Recommendations for Future Researchers

I would recommend to future researchers to:

- Send out the survey towards the middle of the semester- The students should be settled in but they won't be burnt out from school and steer away from extra work, such as surveys.
- Speak at all the CALS' club meetings about participating in the survey and the chance that they could win some prizes- Both things would have brought up the survey response rate.
- Send out the survey via text message- Email accounts receive junk mail daily and so if a text message was sent out rather than an email it could eliminate this error.

Researchers should collect more data on SAEs. They could look into what their SAEs specifically were, how much time was put into their project, was it a continuing project such as raising heifers or was it growing a tomato plant over the summer. These results would show that students who put more time and work into their SAEs would end up putting more effort into their college involvement.

The questionnaire asked which FFA activities they completed in high school but some of the activities were geared solely to Idaho and Washington students. This could have been a disadvantage to students who were from different states and had different FFA activities not listed. This could be eliminated by only listing activities that are available in all the states. Also, only the student's higher-level activities and their placements and leadership positions should be calculated. Just knowing how many events a student attends a year does not indicate that they actually participated or how well they did in the events.

The students were asked to rate their self-perceived success, but rather than just asking how successful a students thinks they are, first find out what "success" means to them. My respondents all felt they were very successful, which either means they have
different definitions on what success is or they can't admit that they aren't very successful.

Further research could look into more specific details on the student's internships while attending the University of Idaho. Questions should be asked to see if the internship related to FFA events they participated in, their SAE projects, and leadership roles they may have had in FFA.

## Summary

A discussion of findings for each objective was provided, along with recommendations for future research, agricultural educators, and CALS recruiters. This study sought to answer if there was a relationship between students who were involved in FFA and SAEs in high school and their college involvement. The researcher concluded that students who were in FFA and had SAE projects were not more involved in college than students who weren't. A few suggestions to increase this correlation are for students to have more rigorous SAE projects and to be more actively involved in FFA.

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## Appendix. Questionnaire

## Default Question Block

Hello CALS students,
Thank you for agreeing to participate in this important study that will help determine the relationship between college success and high school participation in FFA and Supervised Agricultural Experiences.

This survey should take around 5 minutes to complete. Your responses will be kept confidential.

Once again, thank you for taking the time to complete this questionnaire.

Are you 18 years of age or older?
No

Please enter in your student ID number (ex: 101-10101)

How successful do you feel you are at the University of Idaho?
Please select a number from $1-10$ with 10 being the most successful and 1 being the least successful.

Low

attended?

YES
NO

How many semesters of Agricultural Education did you complete in high school?

|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| NUMBER OF SEMESTERS | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ |

Were you a member of FFA?
$\bigcirc$ Yes
No

How many years were you a member of the National FFA Organization? (select a number)

|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| NUMBER OF YEARS | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ |

Listed below are several activities and officer positions, which give students an opportunity to be actively involved in high school FFA. Please indicate the activity or activities you participated in.
(select all that apply)
COUNTY FAIR EXHIBITORDISTRICT LEVEL CDEstate level coeNATIONAL LEVEL CDESTATE FFA CONVENTIONNATIONAL FFA CONVENTIONCHAPTER OFFICERstate officerWASHINGTON LEADERSHIP CONFERENCE

212/360 LEADERSHIP CONFERENCEchapter Level social events

Listed below are FFA degrees. Please indicate the highest FFA degree you received. (select one)
GREENHANDCHAPTERstate
AMERICAN

Did you have a Supervised Agricultural Experience (SAE) project in high school?
$\bigcirc$ Yes
No

Were Supervised Agricultural Experience projects required for your Agricultural Education class?

Yes
No

Were SAEs graded as part of class?

Yes
No

What type(s) were your SAE projects? (select all that apply)
$\square$ ENTREPRENEURSHIP
$\checkmark$ PLACEMENT (PAID OR UNPAID)
Q RESEARCHEXPLORATORY

Which category(s) were you SAE projects in? (select all that apply)PLANT SYSTEMSANIMAL SYSTEMSAG POWER, STRUCTURE, AND MECHANICSFOOD SCIENCESOCIAL SYSTEMSENVIRONMENT AND NATURAL RESOURCES

Was your SAE program related to your current college major?

Yes
No

Please indicate your level of agreement for each statement.

|  | Strongly Disagree | Disagree | Agree | Strongly Agree |
| :--- | :--- | :--- | :--- | :--- |
| MY SAE PROJECT |  |  |  |  |
| INFLUENCED ME TO COME |  |  |  |  |
| TO THE U OF I |  |  |  |  |
| MY SAE PROJECT HAD AN |  |  |  |  |
| INFLUENCE ON DECIDING |  |  |  |  |
| MY MAJOR |  |  |  |  |
| MY SAE PROJECT HAD AN |  |  |  |  |
| INFLUENCE ON MY |  |  |  |  |
| INTERNSHIP PLACEMENT |  |  |  |  |

## Did you participate in $4-\mathrm{H}$ ?

No

## How many years were you a member of $4-\mathrm{H}$ ?

(select a number)


```
Listed below are several events that are focused on 4-H. Please indicate the activity or activities that you participated in prior to enrolling to the University of Idaho. (select all that apply)
COUNTY FAIR
4-H AMBASSADOR
4-H WEEK
4-H LEADER TRAINING
KNOW YOUR GOVERNMENT CONFERENCE
THE TEEN AMBASSADOR LEADERSHIP KIT (TALK)
TEEN CONFERENCE
IDAHO 4-H LEADERSHIP RETREAT
LIVESTOCK JUDGING CAMP
CITIZENSHIP WASHINGTON FOCUS
NATIONAL 4-H CONFERENCE
NATIONAL 4-H CONGRESS
NATIONAL 4-H DAIRY CONFERENCE
```

Please indicate your level of agreement for each statement.

|  | Strongly Disagree | Disagree | Agree | Strongly Agree | N/A |
| :--- | :---: | :---: | :---: | :---: | :---: |
| 4-H INFLUENCED ME TO | $\bigcirc$ |  |  |  |  |
| COME TO THE U OF I |  |  |  |  |  |

Which club(s) are you a member of this academic school year?
(select all the apply)
$\square$ ALPHA GAMMA RHO
$\square$ AMBASSADORS
$\square$ AGRICULTURE SYSTEMS MANAGEMENT
$\square$ AGRICULTURAL STUDENT AFFAIRS COUNCIL (AGSAC)
$\square$ BLOCK AND BRIDAL
$\square$ COLLEGIATE FARM BUREAU
$\square$ COLLEGIATE FFA (CFFA)
$\square$ COLLEGIATE 4-H
$\square$ COLLEGIATE FAMILY CAREER AND COMMUNITY LEADERS OF AMERICA (FCCLA)DAIRY CLUBENTOMOLOGY CLUBFARM HOUSEFOOD AND NUTRITION CLUBFOOD SCIENCE CLUB
$\square$ HORSE POLO CLUBINTERNATIONAL TEXTILES AND APPAREL ASSOCIATION (ITAA)LIVESTOCK JUDGING CLUBASSOCIATION FOR THE EDUCATION OF YOUNG CHILDREN (AEYC-SA)PHI UPSILON OMICRONPLANT SOIL SCIENCE CLUBPRE-VETERINARY CLUBRANGE CLUBRODEO CLUBSTUDENT IDAHO CATTLE ASSOCIATIONSIGMA ALPHsoils stewards club

## How many club events do you attend per academic year? Please include trips, large events, and general meetings. <br> (Enter a number)

How many officer and/or committee chair positions have you held this academic school year?
(Enter a number)

How often do you attend your classes?
$100 \%$ OF THE TIME
$90 \%$ OF THE TIME
80\% OF THE TIME
$70 \%$ OF THE TIME
LESS THAN 70\% OF THE TIME

Have you had an internship while attending the University of Idaho?
YES
ONO

In what category or categories were your internships? (select all that apply)
$\square$ PLANT SYSTEMS
$\square$ ANIMAL SYSTEMS
$\square$ AG POWER, STRUCTURE, AND MECHANICS
$\square$ FOOD SCIENCESOCIAL SYSTEMSENVIRONMENT AND NATURAL RESOURCES

Is there anything else you would like to share about yourself and/or how FFA and SAEs have had an influence on your college experience at the University of Idaho?

