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Effects of Animal Science Agricultural Education Course Completion on Urban High School Students' Career Choice

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EFFECTS OF ANIMAL SCIENCE AGRICULTURAL EDUCATION COURSE COMPLETION ON URBAN HIGH SCHOOL STUDENTS' CAREER CHOICE

by

Kristina Gowans

A thesis submitted in partial fulfillment
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ABSTRACT

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This study focused on testing the effects of agricultural education on urban high school students' career choices. It looked into how students view agriculture, how they perceive their peers view agriculture, how their demographics are related to career choice, and if their career choice was changed to a different career upon completion of the study. The study showed a positive relationship between completing an agricultural education class in animal science and interest in going into an agricultural career. Further, females in the study were more likely to choose an agricultural career. After the completion of a school-based agricultural education program, both students and their peers had a more positive outlook on agriculture and its possibilities as a career. Students also increased their career self-efficacy score during the completion of an animal science agricultural education course. They became more confident in their ability to make decisions related to their future career.

(83 pages)

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This study focused on testing the effects of agricultural education on urban high school students' career choices. It looked into how students view agriculture, how they perceive their peers view agriculture, how their demographics are related to career choice, and if their career choice was changed to a different career upon completion of the study. The study showed a positive relationship between completing an agricultural education class in animal science and interest in going into an agricultural career. Further, females in the study were more likely to choose an agricultural career. After the completion of a school-based agricultural education program, both students and their peers had a more positive outlook on agriculture and its possibilities as a career. Students also increased their career self-efficacy score during the completion of an animal science agricultural education course. They became more confident in their ability to make decisions related to their future career.

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CHAPTER I

INTRODUCTION

A report published by Purdue University and the United States Department of Agriculture's National Institute of Food and Agriculture predicted that between the years 2010 and 2015, there will be 54,000 agriculturally related job openings nationwide (Goeker, Smith, Smith & Goetz, 2010). The 2011-2015 National Research Agenda of the American Association for Agricultural Education (Doerfert, 2011) identified nine research priority areas for agricultural education. Specifically, priority number three places emphasis on attracting and developing the next generation of agricultural scientists. These publications emphasize the importance of obtaining individuals to fill these positions as well as creating an educated workforce. Further, the National Research Agenda states that in addition to societal and industry challenges, today's learners are more diverse than ever. Learners must be well prepared in the discovery of science, teaching and learning, and in the integration of science, technology, engineering and mathematics (STEM). In fact, the need to provide a highly educated, skilled workforce capable of providing solutions to 21st century challenges and issues has never been greater. There is a growing need to develop strategies to create a society of diverse, highly educated professionals at all levels to address those challenges and develop innovations that drive economic growth (Doerfert, 2011).

In addition to an abundance of agricultural jobs, there are not enough individuals studying agriculturally related careers and there is no determined path to fix this problem (Goeker et al., 2010). According to the Coalition for a Sustainable Agricultural Workforce,

three major obstacles exist in recruiting people into careers in agriculture, including budget constraints, student misconceptions, and competition for the most talented people from science and industry (Weed Science Society of America, 2010). This is further compounded by population growth and population shift from rural to urban and metropolitan centers.

Out of the 83,621 public schools in the nation, 26% are listed in what the federal government qualifies as "rural." These rural schools educate 16% of the population of students enrolled in public education (Stern, 1994). Agriculture and related trades continue to be an attractive postsecondary option for students who come from a rural school (Gándara, Gutiáez, & O□Hara, 2006). However, with so few schools serving rural communities, what role do school-based agricultural education classes play in urban high schools in encouraging students to pursue careers in agriculture?

Determining the effect of animal science–based agricultural education courses on students' decisions to pursue agriculturally related careers will assist in the development of programming including course offerings, experimental learning opportunities and internship programs. Further, guiding students into agricultural careers may increase the number of individuals needed to fill careers essential to the success of the agriculture industry.

Statement of Problem/Purpose

Does completing an animal science course affect urban high school students' career choices? This study focused on four animal science–based courses in an urban school-

based agricultural education program in Utah. Courses included Animal Science I, Equine Science, Veterinary Assisting I, and Veterinary Assisting II.

This study was designed to determine the effects of the completion of one animal science-based agricultural education course on urban high school students' decision to choose an agriculturally related career. Researchers also sought to determine which of the influences effect career choice to the greatest extent.

The objectives of this study were to:

1. Determine the change in career choice after completion of an animal science–based agricultural education course.
2. Determine which factors influence career choices of high school students.
3. Determine student perception of agricultural careers.
4. Determine students' Career Decision Self-Efficacy.
5. Describe characteristics of students (gender, grade, and ethnicity).
6. Determine the relationship between gender and career selection.

Limitations of the Study

The limitations of this study include:

1. Self-selection of courses. This study examined students from nine high schools in an urban area. Students have choices when selecting courses, and typically select courses in which they have an interest. All students in this study self-selected the elective animal science–based course in which they enrolled.

2. Location. This study was conducted in an urban school district in Utah. Therefore, the results cannot be generalized to other schools, districts, or regions.
3. Variables. Data collected in this study does not consider control variables such as socioeconomic status, family structure, parental involvement, motivation, or other variables which could influence a student's career choice.
4. Change in instructor during the course. During this course, we had to call in a long-term substitute. Because of this, a large percentage of upper classman dropped the course throughout the semester.

Basic Assumptions

This study included secondary students enrolled in grades 9 through 12 who attended one magnet technical urban high school in Utah. This magnet school enrolled students from the previously nine mentioned high schools. The study only includes first-time enrollees in an animal science-based agricultural education course. Courses in this school have a student enrollment cap of 40 students per class. This study was conducted in six animal science-based agricultural education courses. Finally, a pilot test was conducted with a similar course environment in the same school.

Significance of the Problem

Identifying the motivating factors for career choice in high school students may assist teachers in developing curriculum and when advising students. The factors that

influence students' career choice will help develop program standards for future curriculum, and will additionally assist with the development of recruitment strategies and materials with the overall goal of increasing enrollment.

This study was conducted on a local level; however, it could be replicated by others in similar urban populations. Further studies could be beneficial tools for agriculture teachers, counselors, public schools in general, and organizations such as the FFA or Nation Association of Agricultural Educators that are interested in recruitment in post secondary education and agricultural careers.

Knowing what encourages students to and discourages students from pursuing agricultural careers allows practitioners to make modifications on a personal level concerning what is taught in classrooms, without losing the integrity of the information taught in those courses. The conclusions of this study could contribute to the agriculture industry by identifying those individuals who are likely recruitment candidates for agricultural careers.

CHAPTER II

REVIEW OF LITERATURE

Theoretical Framework

Parsons identified the following process counselors use to guide students as they make career decisions: (a) personal data, (b) self-analysis, (c) the person's own choice and decision, (d) counselor's analysis, (e) outlook on the vocational field, (f) induction and advice, and (g) helping the student fit into the chosen work. This process focused on the counselor's analysis of the student and their fit within the career (Parsons, 1909). Parsons recommended that this analysis focus on heredity and circumstance, temperament and natural equipment, face and character, education and experience, and dominant interests. While this analysis is not focused on agriculture, it does identify variables for all students when selecting a career.

There are three theoretical frameworks that serve as the foundation of this study. The first theory is based upon Super's (1980) lifespan/life space approach to career decision-making, which indentified the determinants that influence individuals' career choice including genetic factors, geographic location, and historic, social, and economic conditions. The genetic factors consist of the individual's environment and its situational determinants (e.g., womb, home, community; Super, 1980). These factors act on the development of aptitudes, interests and values (Herr, 1997).

Super further explained the process by describing the steps that are made once we reach a "career decision point" (1980, p. 294). This 12-step process includes:

1. Becoming aware of an impending career decision
2. Formulating the question
3. Reviewing the premises
4. Identifying facts needed to round out an understanding of the situation
5. Seeking these data
6. Evaluating and weighing the old and new data
7. Identifying alternative lines of action
8. Considering their various possible outcomes and their respective probabilities (exploration)
9. Weighing the alternatives in terms of values and objectives
10. Selecting the preferred plan of action
11. Storing the alternatives for possible future reference
12. Pursuing the plan on either an exploratory basis or with a more definite, but still tentative, commitment (establishment).

Specifically 14- to 24-year-old individuals (which encompasses high school–age students) are said to be in the exploration or exploratory stage of life; they are shown to experiment and take alternative routes of action (Super, 1980).

This study explored how secondary school-based animal science agricultural education courses affect steps 5 through 12 when a student has chosen a career coming into the course. Super's 12-step process is not just an event but rather a life span process because it consists of large and small choices that a person must make about a career choice over an extended period of time (Herr, 1997).

The second theory guiding this study is Bandura's (1997) self-efficacy theory. Career decision-making self-efficacy denotes individuals' degree of confidence that they can successfully engage in tasks associated with making a career choice and commitment to a career (Taylor & Betz, 1983). Bandura identified four sources of efficacy information that must be considered; they include performance accomplishments, vicarious learning, physiological and affective states, and verbal persuasion. Bandura defined self-efficacy as a cognitive appraisal or judgment for future performance capabilities, not a trait-based concept. Therefore, self-efficacy must be measured against some type of behavior. The focus of Bandura's study was to measure students' confidence in their career choice (Bandura, 1997).

The third theory that underpins this study is Crites' theory of career maturity. Crites originally identified self-appraisal, occupation information, goal selection, planning, and problem solving as the major factors concerned with career choice (Crites, 1978). Crites later refined and condensed these factors, which are tested in his career maturity inventory. The revised factors include (1) concern, which is the extent to which an individual is oriented to and involved in the process of making career decisions; (2) curiosity, which is the degree to which an individual is exploring the work world and seeking information about occupations and their requirements; (3) confidence, which is the amount of faith individuals have in their ability to make wise career decisions and realistic occupation choices; and (3) consultation, the extent to which an individual seeks advice from others in making career decisions and occupational choices (Savickas & Porfeli, 2011). Both Super's (1980) Life space/Lifespan approach to career decision making and Crites (1978) theory of career maturity are occurring at the same time in every individual.

Urban Agricultural Education

School-based agricultural education programs in urban areas are defined as "programs of study where students receive formal instruction in an agriculturally related subject in an urban cluster or metro-urban area" (Soloninka, 2003). The 2010 U.S. Census classifies an urban area as 50,000 or more people and an urban cluster as at least 2,500 and less than 50,000 people. Rural communities encompass all population, housing, and territory not included within an urban area (United States Census Bureau, 2010). In the United States, 80.7% of the population are listed in the total urban population according to the U.S. Census report for 2010. This leaves 19.3% as living in a rural population.

The U.S. Census report for 2010 identified five Utah cities as urban areas and 32 cities listed as urban clusters. The largest urban area in Utah is the Salt Lake City/West Valley City Region. A complete listing of all urban areas and urban clusters in Utah is found in Appendix A, and shows that the population in Utah is 90.58% urban and 9.42% rural (United States Census Bureau, 2010). This study on urban agricultural education was conducted in the largest urban area in Utah. Identifying the career interests of students in urban agricultural education is vital since the majority of our students are attending courses in urban areas.

Thompson and Russell (1993) found that students who completed school-based agricultural education coursework held a more positive belief about agriculture. Further, they reported a positive relationship between the amount of school-based agricultural education coursework taken and the positive outlook of students about agriculture. In a study conducted by Fraze and Briers (1987), 56.5% of students who responded to the study and participated in FFA completed some kind of post-secondary schooling and moved into

an agricultural occupation. Further, Fraze and Briers (1987) explained that the longer and more involved students become in their agricultural education program and specifically in the FFA, the more likely they are to pursue an occupation in agriculture.

Career Choice

Esters and Bowen (2005) found that individuals who influenced students' career choice included friends, mother or female guardian, other family member, father or male guardian, an agriculture teacher, other teachers, and guidance counselors. Osborne and Dyer (2000) identified parents as the main influence on students' career choice. Conroy, Scanlon, and Kelsey (1998) reported that children develop ideas about what they can do, like to do, and what others expect them to do at a very young age. This means students' perceptions about agriculture are formed and subsequently influence course enrollment decisions at or before their junior high level. This solidifies the notion that there are many factors that affect students' career choice and what they perceive about agriculture and its potential as a career.

In a 2010 survey on perceptions of agricultural careers by AgCareers.com, only 18% of students reported that their parents were the reason that they were pursing an agriculturally related career. When students were asked how their peers viewed career opportunities in agriculture and food, 23% of students surveyed responded that their peers' view of agriculture and food careers were neutral, or no different than opportunities in other industries. This was followed by 18% believing their peers thought of it as hard work with little pay (AgCareers.Com, 2011b). Osborne and Dyer (2000) found that families believed that agriculture was a possible career field for their child and they liked the

technology involved in agriculture showing a positive outlook held by families for agriculture.

Several studies have found that students in urban communities were more positive about careers in agriculture, yet rural students were more likely to select agriculture as a career option over their urban counterparts (Thompson & Russell, 1993; White, Stewart, & Lindhardt, 1991). Counselors were notably different in urban and rural communities as well; while counselors in urban areas held a better perception of agriculture in general, counselors in rural communities thought less of agriculture in general (Thompson & Russell, 1993).

Osborne and Dyer (2000) found that students' and parents' personal experiences, observations, knowledge, and values about agriculture affect their attitude toward it, which in turn affects their desire to compete in the agricultural industry. Likewise, Thompson and Russell (1993) stated that parents bring influences from home and are more likely to be optimistic about a career in agriculture if they hold a master's degree. Yet, students are more likely to pursue a career in agriculture if their school guidance counselor has a positive outlook on agriculturally related careers.

Further, according to Thompson and Russell, the decisions of individuals to select or not select agriculture as a field of study or to become actively engaged in an agricultural career may be predicted by examining their beliefs about agriculture (1993). Students did perceive agriculture to be science-driven; however, they did not see agriculture as a potential career or as an industry. Thompson and Russell (1993) also found that agriculture jobs are in direct competition with other programs, such as health science, business, and engineering, which are often viewed as more glamorous and promising careers. Because of

this, students are often encouraged to consider different careers instead of agriculture. This direct competition compounds the issue of having a shortage of qualified individuals available to fill the available vacancies.

Careers in Agriculture

The most important function of agricultural education is to prepare youth and adults for careers in agriculture (Phipps & Osborne, 1988). However, the number of students pursuing careers in agriculture has been declining since the 1970s (Jones, 1999). Unemployment rates in the United States were around 9% in 2011, as reported by AgCareers.com in their 2011 Agribusiness Job Report. In this same report, however, agriculture is listed as having an 18% increase of job postings from 2010. This is an increase of over 43,000 jobs between the United States and Canada. In the May 2011 report from the Bureau of Labor statistics there were approximately 370,000 individuals working in the agricultural field (Bureau of Labor Statistics, 2012).

These job postings ranged from agronomy to biotechnology and dairy. Agronomy is currently the leading career industry in all regions of the United States. Other industries ranked in the top five in geographic regions were equipment/machinery, crop protection/chemicals, and meat processing (AgCareers.com, 2011a). Agricultural careers also vary in type from managers to technicians. The top five careers include sales/marketing, general management, management/manager, production, and operations.

Two recent studies revealed common reasons why students consider agriculturally related careers. Ramdwar and Ganpat (2010) found that students in Trinidad considered a career in agriculture for the following reasons: they felt they could make a difference;

opportunity for self employment; employment in the ministry of agriculture; further a professional career at the tertiary level; exposed to the school subject in school; wanted to become a professionally trained farmer; parents and family were involved in farming; wanted to become an agriculture teacher; it was a pathway for alternative study, or, on the negative side, no other option was available. Similarly, in a study conducted by AgCareers.com (2011b), 24% of students in the United States felt they could make a significant impact on providing food and fiber for the world by choosing an agriculturally related career.

Gender Difference in Agriculture

Traditionally, many careers in agriculture tend to be male dominated. In a study conducted by Conroy et al. (1998), males were found to be more likely to choose careers that are considered appropriate for males, which had a much higher bias towards masculine careers, such as. Further they stated that while females are not necessarily less present in the math and science fields, males are just overly abundant as opposed to what is seen in typically feminine careers where males are drastically underrepresented. Agriculture has historically been seen as a science career and also a career that would be considered more masculine.

In addition, Thompson and Russell stated that females had a higher mean than their male counterparts for pursuing agriculture as a career choice. However, males had higher intentions to select agriculture as a career (Thompson & Russell, 1993).

CHAPTER III

METHODS

Population: School-Based Agricultural Education

This study was designed to examine the effect of school-based animal science agricultural education courses on urban high school students' career choice. The results of this research will provide agricultural educators, state leaders, and organizations such as the National FFA information that can help develop curriculum and recruitment efforts focused on agricultural careers. Specifically, this study was designed to determine the effects of completion of one animal science agricultural education course on urban high school students' decision to choose an agriculturally related career and to determine which factors influence career choice to the greatest extent.

The objectives of this study were to:

1. Determine the change in career choice after completion of an animal science–based agricultural education course.
2. Determine which factors influence career choices of high school students.
3. Determine student perception of agricultural careers.
4. Determine students' Career Decision Self-Efficacy.
5. Describe characteristics of students (gender, grade, and ethnicity).
6. Determine the relationship between gender and career selection.

The participants for this study included students from Granite School District, specifically the Granite Technical Institute which is a magnet school that pulls students

from several high schools, specialized schools and junior high schools in the district. Participants in this study were enrolled in an animal science-based course during the spring 2013 semester. The students, ranging from 9^{th}-12^{th} grade, were first-time enrollees in the course. The students at Granite Technical Institute were from an urban background, in an intermountain west metropolitan area.

Granite Technical Institute was chosen as the school for this study because it has the largest population of urban agricultural education students in the state of Utah. The requirements of participants in this study were: (a) be a first-time agriculture student, and (b) be enrolled in one of the six animal science-based courses offered.

The Granite Technical Institute was also chosen for its unique ability to test a large population of students with similar interests all at once. The population of the study represents nine high schools, three specialized schools, and 16 junior high schools, from which participants were randomly selected. There were 62 students that served as the participants in this study.

The students were taught in the same classroom environment with the same laboratory environment. The courses also followed the state standards and objectives for agricultural education courses. State standards and objectives are created for each course in Utah to help teachers know what to teach. In addition, end-of-year course exams provide passing rate information for each course (Education, U. S. 2013).

Instrumentation

Students enrolled in the school-based animal science courses were given a pretest and a posttest regarding careers in agriculture and the Career Decision Self-Efficacy

instrument developed by mindgarden.com (Mind Garden, Inc., 2012). The first of the two instruments administered at the pre-test and post-test periods was a portion of the employment and enrollment outlook created by AgCareers.com (2011a,b). This was an online questionnaire delivered by Qualtrics online data collection software. This instrument measured students' desire to enter the agricultural career force and their perceptions about agricultural careers (AgCareers.com, 2011b).

The second instrument was the Career Decision Self-Efficacy (CDSE) Scale (Mind Garden, Inc., 2012). This online instrument was designed to measure individuals' belief that they can successfully complete the tasks necessary to make significant career decisions. This instrument measures the five Career Choice Competencies based on Crites' Theory of Career Maturity (1978.) See appendix B for a copy of the Instrument used in this study.

Reliability

The Career Decision Self-Efficacy short form has an internal consistency reliability of between $\alpha = .73$ and $\alpha = .83$ for the five item subscales and a reliability of $\alpha = .94$ for the 25 item total score (Mind Garden, Inc., 2012). The reliability for the AgCareers.com portion of the survey was $\alpha = .49$, which is low. However, according to Nunnally (1978), just because an alpha is low does not necessarily make it a detriment. Nunnally concluded that while in the early stages of construct validation research, it may be acceptable or allowed to have only modest reliability.

Data Collection

Researchers obtained permission from the Granite Technical Institute principal, identified participants and administered the pretest in January of 2013. Each participant was given Institutional Review Board-approved informed consent documentation and information forms on the first day of class. See appendix C for a copy of the informed consent form. Forms requiring parent permission were returned to school on the second day of the semester. Students were also given the option to opt out of the study. Students were taken to the computer lab located at the school and given the first round of the questionnaire. This was conducted on the second day of class before any instruction was given to the students about the agriculture industry or any agriculturally related career field.

In an effort to control for anonymity, students created their own unique identification number that was also utilized on the posttest.

Students who were absent from school during the first data collection point were given the questionnaire on their first day back to class prior to any instruction, and given the post-test on their last day of expected attendance in class. The questionnaire was proctored by a third party to control for any bias or influence by the classroom teacher. The results from the students were analyzed for completion of both pretest and posttest.

Data Analysis

From the identified population of secondary agricultural students enrolled in an animal science-based agriculture course (N = 180), the following response rates are reported. The pre-test questionnaires had a 35% response rate (n = 62) and the post-test

questionnaires had a 24% (n = 44) response rate. This included students who completed both the pre-test and post-test.

Responses for both the pretest questionnaires and posttest questionnaires were analyzed using SPSS 20® for Windows. Data analysis methods were selected as a result of determining the scales of measurement for the variables.

Objectives one through four and six, frequencies and percentages were calculated and analyzed for both the pretest and posttest data. The pre-test was labeled “test one” and post-test was labeled “test two” for ease of comparing data.

Objective four was also analyzed using descriptive statistics including mean and standard deviation based on the six summative categories that were established on Mind Garden self-efficacy scale (Mind Garden, Inc., 2012).

Objective five was analyzed using a Pearson correlation. The pretest and posttest were labeled with the “one” and “two,” respectively.

CHAPTER IV

RESULTS

The first objective of this research was to determine the change in career choice among urban high school students after completing one animal science-based course. With 55 total responses on the first questionnaire and 44 respondents on the second questionnaire, there was little or no change in the percentage of students who wanted to pursue an agricultural career. The percentage increased a total of .8% from pretest to posttest.

Further, 74.2% (f = 62) of students stated that they would pursue a career in agriculture in the pretest. The posttest showed a similar result, with 75% (f = 44) of students stating that they would pursue a career in agriculture.

Both questionnaires asked students to identify which agricultural career path they desired to follow. The majority of students in both the pretest (53%, f = 33) and posttest (52%, f = 23) chose veterinary medicine, followed by general animal related careers in both the pretest (16%, f =10) and posttest (18%, f = 8). The next most chosen career path option was non-agriculturally related careers in both the pretest (16.2%, f =10) and posttest (18.2%, f = 8). In the fourth most popular ranking, students left this box unanswered, with a pretest ranking of 11.3% (f = 7) and a posttest ranking of 9.1% (f = 4). Students selected a plant-related career the least often, with only 2 students choosing this option in the pretest (3.2%) and only 1 student selecting this option in the posttest (2.3%). Table 1 shows these results.

Table 1

Students' Desired Career Path

	Pretest *n* = 62		Posttest *n* = 44	
	F	*%*	*f*	*%*
Veterinary Medicine/ Science	33	53.2	23	52.3
Animal Related (other than vet)	10	16.1	8	18.2
Non Agriculturally Related	10	16.2	8	18.2
Missing	7	11.3	4	9.1
Plant Related	2	3.2	1	2.3

The second objective of this study was to determine the factors that influence career choice of high school students. The majority of students identified that school classes influenced their career choice most, with close results in both the pretest (48.4%, *f* = 30) and posttest (56.8%, *f* =25). Parental influence came in second at 43.5% pretest (*f* = 27) and 38.6% posttest (*f* =17). Clubs were the third strongest influence, with very similar results in the pretest (24.2%, *f*=15) and posttest (27.3%, *f* =12). The fourth major influence was both peers and media on the pretest (16.1%, *f* =10); however, results differed slightly on the posttest, with peers ranking at 18.2% (*f* = 8) and media at 13.6% (*f* = 6). Next, students reported school counselors as an influencing factor in both the pretest (12.9%, *f* = 8) and posttest (20.5%, *f* = 9). The influence with the lowest percentage was "other" in both the pretest (3.2%, *f* = 2) and posttest (6.8%, *f* = 3). Table 2 shows these results.

Table 2

Factors Influencing Students' Career Choice in Agriculture

	Pretest *n* = 62		Posttest *n* = 44	
Factors	*f*	%	*f*	%
School Classes	30	48.4	25	56.8
Parents	27	43.5	17	38.6
Clubs (FFA, 4-H, etc.)	15	24.2	12	27.3
Peers	10	16.1	8	18.2
Media	10	16.1	6	13.6
Counselors	8	12.9	9	20.5
Other	2	3.2	3	6.8

The third objective of this study was to determine the perceptions of students regarding agricultural careers. Overall, 45.2% (*n* = 62) of students found agriculture to be a rewarding career opportunity on the pretest, with similar results on the posttest (45.5%, *f* = 20). That was followed by their optimism about agricultural careers, with 22 students selecting this option in both the pretest (35.5%) and posttest (50%). The next most common perception was students' optimism about how their peers feel about agricultural careers in both the pretest (24.4%, *f* =15) and posttest (20.5%, *f* = 9). This was followed by students' belief that agriculture is an easy place to get a job during the pretest (21%, *f* =13) and posttest (25%, *f* =11). However, a small percentage during the pretest (14.5%, *f* = 9) felt neutral about agricultural careers, that there were limited numbers of jobs available, or that it was production oriented. Of these three perceptions, the highest ranking in the posttest

was the production focused option (27.3%, *f* =12), then neutral career (18.2%, *f* = 8), then limited numbers available (13.6%, *f* = 6). The next most common perceptions overall were that agricultural careers are hardworking with limited pay in both the pretest (12.9%, *f* = 8) and posttest (22.7%, *f* = 10). The lowest ranking on students' personal preferences was "other career opportunity," with a pretest ranking of 8.1% (*f* = 5) and a posttest ranking of 2.3% (*f* = 1). The "other" option was not broken down to show what fell in this category.

During the questionnaires, students ranked their peers as having a much different outlook than themselves. The leading perception was that peers think agricultural careers are hard work and limited pay in both the pretest (32.3%, *f* = 20) and posttest (34.1%, *f* = 15). Next, students believed that peers think agriculture is a neutral career (neither positive nor negative) in both the pretest (29%, *f* = 18) and posttest (36.4%, *f* = 16).The options "peers think it has limited numbers" and "peers think it is an easy place to get a job" had the exact same scores on the pretest (29%, *f* = 18) as well as the posttest (22.7%, *f* = 10). "Peers think it is rewarding" placed right in the middle with a pretest ranking of 21% (*f* = 13) and a posttest ranking of 20.5% (*f* = 9). The next perception was that peers think agriculture is production focused, with similar pretest (8.1%, *f* = 5) and posttest (9.1%, *f* = 4) results. Lastly was the option "peers other." Two students chose this option in the pretest (3.2%) and no students selected this in the posttest (0%, *f* = 0). Table 3 lists the results.

Along with the objective three regarding perception of students about agriculture, we found that students perceived agriculture to be a "green" industry. In the pretest, 58.3% (*n* = 62) of students felt agriculture was a green career. After the class, the number of students who believed agriculture was a green industry greatly increased. With 81.8% (*n* = 44) of students identifying agriculture as a green industry in the posttest.

Table 3

Perceptions of Students and their Peers about Agriculture as a Career

	Pretest		Posttest	
Perceptions	*f*	%	*f*	%
Rewarding career in agriculture	28	45.2	20	45.5
Optimistic about career	22	35.5	22	50
Optimistic about how peers feel	15	24.2	9	20.5
Easy place to get a job	13	21	11	25
Neutral career in agriculture	9	14.5	8	18.2
Production focused	9	14.5	12	27.3
Limited numbers	9	14.5	6	13.6
Hardworking and limited pay	8	12.9	10	22.7
Other career opportunity	5	8.1	1	2.3
Peers think it is hard work and limited pay	20	32.3	15	34.1
Peers think it is neutral	18	29	16	36.4
Peers think it is an easy place to get a job	18	29	10	22.7
Peers think it has limited numbers	18	29	10	22.7
Peers think it is rewarding	13	21	9	20.5
Peers think it is production focused	5	8.1	4	9.1
Peers other	2	3.2	0	0

Students were also asked if they feel encouraged or discouraged about the future of agriculture. The majority of students stated that they were encouraged about the future of agriculture in both the pretest (45%, *f* = 27) and posttest (45.5%, *f* = 20). This was followed by 33.3% of students not being sure about the future of agriculture in the pretest (*f*=20) and 25% of students feeling unsure in the posttest (*f* = 11,). Eleven students felt extremely encouraged about the future of agriculture in the pretest (18.3%); this number went up to 13 students in the posttest (29.5%). Few students were discouraged about the future of agriculture in both the pretest (3.3%, *f* = 2) and posttest (0%, *f* = 0). Table 4 shows these beliefs about the future of agriculture.

Table 4

Students' Beliefs about the Future of Agriculture on the Pretest and Posttest

	Pretest *n* = 62		Posttest *n* = 44	
"How encouraged or discouraged are you about the future of agriculture?"	*f*	*%*	*f*	*%*
Encouraged	27	45	20	45.5
Not sure	20	33.3	11	25
Extremely encouraged	11	18.3	13	29.5
Discouraged	2	3.3	0	0
Totals	60	99.9	44	100

In addition to students' perceptions about agricultural careers and the future of the industry, we also wanted to discover how students perceived their ability to make an impact

in agriculture. The questionnaires asked students, “To what extent do you feel a career in agriculture lets you make a significant impact?” Students ranked their responses on a scale of 1 to 10, where 10 is a significant impact and 1 is no impact. In the pretest, most students (26.7%, *f* = 16) selected 5, indicating an average impact. This response dropped to 18.2% (*f* = 8) in the posttest. The next most common responses for both questionnaires were 7 and 8, indicating more significant impact. The response of 7 nearly doubled between the pretest (18.3%, *f* = 11) and posttest (31.8%, *f* = 14), making it the most common answer for the posttest. The response of 8 was very similar across both tests, with 16.9% (*f* = 10) of students selecting this option in the pretest and 15.9% (*f* = 7) choosing it in the posttest. The least selected results in the pretest were 3 (1.7%, *f* = 1), 2 (0%, *f* = 0) and 1 (1.7%, *f* = 1), with very similar results in the posttest, indicating that many students believed an agricultural career would allow them to have a substantial impact. Interestingly, the response of 10 dropped from a pretest ranking of 8.3% (*f* = 5) to a posttest ranking of 4.5% (*f* = 2). Table 5 shows the results.

The fourth objective of this study was to determine students’ career decision self-efficacy. After compiling the individual results, the results were put into constructs to determine students’ confidence and self-efficacy. Scores were ranked on a scale of 1 to 5, where 5 is complete confidence and 1 is no confidence at all. For all categories of career readiness except the planning category, students’ confidence increased from pre-test to post-test. Table 6 summarizes the means and standard deviations for each of the six categories for the pretest and posttest measures. Students rated themselves with a pretest self-efficacy score of 3.6093 and a posttest self-efficacy score of 3.7190. Overall students

gained a .12 self-efficacy score. This would rank the students between moderate confidence and much confidence.

Table 5

Agriculture's Ability to Make a Significant Impact on the Future

	Pretest *n* = 62		Posttest *n* = 44	
"To what extent do you feel a career in agriculture lets you make a significant impact?"	*f*	*%*	*f*	*%*
10	5	8.3	2	4.5
9	4	6.7	4	9.1
8	10	16.6	7	15.9
7	11	18.3	14	31.8
6	9	15	5	11.4
5	16	26.7	8	18.2
4	3	5	2	4.5
3	1	1.7	0	0
2	0	0	1	2.3
1	1	1.7	1	2.3
Total	62	100	44	100

Note. 1 = No Impact, 10 = Significant amount of impact.

Table 6

Summative Means and Standard Deviations of the Six Categories of Career Readiness for the Pretest

	Pretest *n* = 62		Posttest *n* = 44	
"Summative of self evaluation of career readiness……"	*M*	*SD*	*M*	*SD*
Self-Appraisal	3.8	.70	3.9	.67
Occupation information	3.6	.85	3.6	.77
Goal Selection	3.6	.76	3.8	.54
Planning	3.5	.83	3.4	.82
Problem Solving	3.4	.78	3.4	.73
Total Sore	3.6	.68	3.7	.59

Note. 1 = No confidence at all, 2 = Very Little Confidence, 3 = Moderate Confidence, 4 = Much Confidence, 5 = Complete Confidence.

Overall, between the pretest and posttest students reported that they gained confidence in their ability to be career ready. Table 7 displays the pretest career readiness results and Table 8 shows the posttest results.

Table 7

Confidence in your Career Readiness Prior to Taking a Class (n = 62)

	No confidence at all		Very Little Confidence		Moderate Confidence		Much Confidence		Complete Confidence	
"How much confidence do you have that you could..."	*f*	*%*	*f*	*%*	*f*	*%*	*f*	*%*	*f*	*%*
Use internet to find information about occupations that interest you	2	3.3	3	4.9	21	34.4	18	29.5	17	27.9
Find out the employment trends for an occupation	5	8.1	7	11.3	26	41.9	16	25.8	8	12.9
Choose a career that will fit your preferred lifestyle	0	0	4	6.5	12	19.4	25	40.3	2	33.9
Prepare a good resume	4	6.5	10	16.1	20	32.3	13	21	15	24.2
Change majors if you did not like your first choice	4	6.5	12	19.4	23	37.1	14	22.6	9	14.5
Decide what you value most in an occupation	2	3.2	2	3.2	17	27.4	25	40.3	16	25.8
Find out about the average yearly earnings of people in an occupation career	2	3.2	6	9.7	17	27.4	20	32.3	17	27.4
Make a career decision and then not worry whether it was right or wrong	4	6.5	14	22.6	24	38.7	12	19.4	8	12.9

(Table 7 Continues)

	No Confidence at all		Very Little Confidence		Moderate Confidence		Much Confidence		Complete Confidence	
"How much confidence do you have that you could…"	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%
Change occupations if you are not satisfied with the one you enter	2	3.2	11	17.7	25	40.3	16	25.8	8	12.9
Figure out what you are and are not ready to sacrifice to achieve your career goals	1	1.6	7	11.3	22	35.5	22	35.5	10	16.1
Talk with a person already employed in a field you are interested in	4	6.5	5	8.1	10	16.1	15	24.2	28	45.2
Choose a major or career that will fit your interests	2	3.2	3	4.8	11	17.7	16	25.8	30	48.4
Identify employers, firms, and institutions relevant to your career possibilities	3	4.8	9	14.5	19	30.6	20	32.3	11	17.7
Define the type of lifestyle you would like to live	1	1.6	2	3.2	9	14.5	24	38.7	26	41.9
Find information about graduate or professional schools	2	3.3	3	4.9	13	21.3	26	42.6	17	27.9
Successfully manage the job interview process	1	1.6	9	14.5	17	27.4	24	38.7	11	17.7

(Table 7 Continues)

	No confidence at all		Very Little Confidence		Moderate Confidence		Much Confidence		Complete Confidence	
"How much confidence do you have that you could ...."	*f*	*%*	*f*	*%*	*f*	*%*	*f*	*%*	*f*	*%*
Identify some reasonable major or career alternatives if you are unable to get your first choice	1	1.6	8	12.9	17	27.4	22	35.5	14	22.6
Selecting one major from a list of potential majors you are considering	6	9.8	4	6.6	23	37.7	23	37.7	5	8.2
Make a plan of your goals for the next five years	1	1.6	10	16.4	17	27.9	23	37.7	10	16.4
Determine the steps to take if you are having academic trouble with an aspect of your chosen major	2	3.2	10	16.1	27	43.5	15	24.2	8	12.9
Accurately assess your abilities	3	4.9	2	3.3	23	37.7	19	31.1	14	23
Select one occupation from a list of potential occupations you are considering	1	1.6	8	13.1	18	29.5	15	24.6	19	31.1
Determine the steps you need to take to successfully complete your chosen major	3	4.8	7	11.3	17	27.4	18	29.0	17	27.4

(Table 7 Continues)

	No confidence at all		Very Little Confidence		Moderate Confidence		Much Confidence		Complete Confidence	
"How much confidence do you have that you could ...."	*f*	*%*	*f*	*%*	*f*	*%*	*f*	*%*	*f*	*%*
Persistently work at your major or career goal even when you get frustrated	2	3.2	6	9.7	16	25.8	21	33.9	17	27.4
Determine what your ideal job would be	1	1.6	5	8.1	8	12.9	25	40.3	23	37.1

Table 8

Confidence in Your Career Readiness Posttest (n=44)

	No confidence at all		Very Little Confidence		Moderate Confidence		Much Confidence		Complete Confidence	
"How much confidence do you have that you could …"	*f*	*%*	*f*	*%*	*f*	*%*	*f*	*%*	*f*	*%*
Use internet to find information about occupations that interest you	0	0	4	9.1	13	29.5	16	36.4	11	25
Find out the employment trends for an occupation	1	2.3	11	25	16	36.4	10	22.7	6	13.6

(Table 8 Continues)

	No confidence at all		Very Little Confidence		Moderate Confidence		Much Confidence		Complete Confidence	
"How much confidence do you have that you could …"	*f*	*%*	*f*	*%*	*f*	*%*	*f*	*%*	*f*	*%*
Choose a career that will fit your preferred lifestyle	0	0	1	2.3	10	22.7	16	36.4	17	38.6
Prepare a good resume	3	6.8	9	20.5	11	25	14	31.8	7	15.9
Change majors if you did not like your first choice	2	4.5	10	22.7	14	31.8	14	31.8	4	9.1
Decide what you value most in an occupation	0	0	1	2.3	11	25	17	38.6	15	34.1
Find out about the average yearly earnings of people in an occupation career.	1	2.3	5	11.4	11	25	16	36.4	11	25
Change occupations if you are not satisfied with the one you enter	2	4.5	7	15.9	12	27.3	14	31.8	9	20.5
Figure out what you are and are not ready to sacrifice to achieve your career goals	0	0	6	13.6	14	31.8	19	43.2	5	11.4

(Table 8 Continues)

	No confidence at all		Very Little Confidence		Moderate Confidence		Much Confidence		Complete Confidence	
"How much confidence do you have that you could …"	*f*	*%*	*f*	*%*	*f*	*%*	*f*	*%*	*f*	*%*
Talk with a person already employed in a field you are interested in	0	0	3	6.8	8	18.2	17	38.6	16	36.4
Choose a major or career that will fit your interests	0	0	2	4.5	5	11.4	15	34.1	22	50
Identify employers, firms, and institutions relevant to your career possibilities	2	4.5	7	15.9	11	25	17	38.6	7	15.9
Define the type of lifestyle you would like to live	0	0	0	0	10	22.7	14	31.8	20	45.5
Find information about graduate/professional school	3	6.8	3	6.8	12	27.3	16	36.4	10	22.7
Determine the steps to take if you are having academic trouble with an aspect of your chosen major	2	4.5	6	13.6	14	31.8	16	36.4	6	13.6
Accurately assess your abilities	2	4.5	4	9.1	11	25	15	34.1	12	27.3

(Table 8 Continues)

	No Confidence at all		Very Little Confidence		Moderate Confidence		Much Confidence		Complete Confidence	
"How much confidence do you have that you could…"	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%
Select one occupation from a list of potential occupations you are considering.	0	0	3	7	14	32.6	16	37.2	10	23.3
Determine the steps you need to take to successfully complete your chosen major	1	2.3	6	13.6	11	25	21	47.7	5	11.5
Persistently work at your major or career goal even when you get frustrated	0	0	3	6.8	11	25	21	47.7	9	20.5
Determine what your ideal job would be	0	0	2	4.5	5	11.4	19	43.2	18	40.9

Along with the self-efficacy questionnaire, students also identified their preferred method of learning about careers, what they expected to earn in a starting position in an agricultural career, the amount of education required to achieve their desired occupation, and how confident they are that they will receive a job upon graduation. They identified that their preferred method of learning about careers during the pretest was through school courses and their least favorite method of learning about careers was through the newspaper or periodicals. The posttest showed similar results, except that internet job boards tied with newspapers and periodicals as their least desired method. Table 9 lists the pretest and posttest results about preferred methods of learning about careers.

Table 9

Preferred Method of Learning About Career Opportunities Taken During the Pretest and Posttest

	Pretest *n* = 62		Posttest *n* = 44	
"What is your preferred method of learning about career opportunities…"	*f*	*%*	*f*	*%*
School Courses	22	35.5	14	31.8
Family/Friends	13	21	9	20.5
Guidance counselor/ career services	8	12.9	6	13.6
Company websites	6	9.7	8	18.2
Internet job boards	5	8.1	1	2.3
Organizations/Extracurricular	4	6.5	3	6.8
Other	3	4.8	2	4.5
Newspaper and periodicals	1	1.6	1	2.3

In both the pretest and posttest, most students felt they could expect a salary of $0-$35,000 in their first job. In both tests, a very similar percentage of students felt their salary would be in the $36,000-$45,000 range for their first job. However, most students were pessimistic that their salary would reach $65,000 or greater during their first year in the workforce. These results are summarized in Table 10.

Table 10

Salary Expectations for First Year in the Workforce

	Pretest *n* = 62		Posttest *n* = 44	
"What is your expected salary for your first year in the workforce ……"	*f*	*%*	*f*	*%*
$0-$35,000	27	43.5	14	31.8
$36,000-$45,000	15	24.2	11	25
$46,000-$55,000	11	17.7	8	18.2
$56,000-$65,000	5	8.1	3	6.8
$65,000 and greater	0	0	3	6.8
Already in the workforce	4	6.5	5	11.4

In the pretest, the largest population of students (37.1%, *f* = 23) believed they would at least need to obtain a 4-year bachelor's degree to be hired for the job they desired. However, the numbers flipped slightly in the posttest (27.3%, *f* = 12). Following a large gap, the second largest group in the pretest (22.6%, *f* = 14) believed they would need a master's degree; however, the number of students that selected this option decreased in the posttest (15.9%, *f* = 7). In the pretest, 2-year/technical degree and doctorate were tied at 17.7% (*f* = 11). In the posttest, doctorate became the leading selection overall (34.1%, *f* = 15) while the 2-year/technical degree fell in selection (13.6%, *f* = 6). Finally, on both the pretest (4.8%, *f* = 3) and the posttest (9.1%, *f* = 4), high school was listed as last. Table 11 shows these results.

Table 11

Education Expectations to Obtain Desired Job

	Pretest *n* = 62		Posttest *n* =44	
"What is the highest level of education you think you'll need to obtain to get the job you desire to have ……"	*f*	*%*	*f*	*%*
4 years/Bachelor	23	37.1	12	27.3
Masters	14	22.6	7	15.9
2 year/Technical	11	17.7	6	13.6
Doctorate	11	17.7	15	34.1
High school	3	4.8	4	9.1

The majority of students responded that they were confident that they would receive a job upon graduation both the pretest (48.4%, *f* = 30) and posttest (50%, *f* = 22). The second largest group indicated they were not sure they would receive a job upon graduation in both the pretest (35.5%, *f* = 22) and posttest (22.7%, *f* = 10). The next largest population, extremely confident, is the largest gap between categories with a pretest ranking of 11.3% (*f* = 7) and a posttest ranking of 13.6% (*f* = 6). The fourth group was uncertain of their future in the pretest (4.8%), *f* = 3with a slight increase in the posttest (11.4%, *f* = 5). Finally, the option with the lowest selection was extremely uncertain, with zero respondents in the pretest and one respondent in the posttest. Table 12 displays these results.

Table 12

Confidence That You Will Receive a Job upon Graduating

	Pretest *n* = 62		Posttest *n* = 44	
"How confident are you that you will receive a job upon graduation?"	*f*	*%*	*f*	*%*
Confident	30	48.4	22	50
Not Sure	22	35.5	10	22.7
Extremely Confident	7	11.3	6	13.6
Uncertain	3	4.8	5	11.4
Extremely Uncertain	0	0	1	2.3
Totals	62	100	44	99.6

The fifth objective was to determine the demographics of the students, including gender, grade, and ethnicity. Of the 62 individuals completing the pretest, 73.8% (*f* = 45) were female and 26.2 % were male (*f* = 16). This was decreased to 44 individuals taking the posttest. While this study was being conducted, we had to call in a long-term sub for some of the veterinarian medicine courses. With the long-term sub, we saw a large increase in the number of upperclassmen, specifically 12th graders, who dropped the course or transferred out throughout the semester, which contributed to a smaller number of students completing the posttest. Of the 44 individuals completing the posttest, 72.7% (*f* = 32) were females and the remaining 27.3% (*f* = 12) were males. This is vastly different from the state statistics for public education schools. According to the Utah

State Office of Education, 51% of students are males and 49% of students are females. This is of the approximately 550,000 students a year in Utah public schools (Education, 2012).

Participants in the study were in grades 9 through 12 with the majority of students in the 10th grade on both the pretest (32.3%, *f* = 20) and posttest (38.6%, *f* = 17). Eleventh graders were the second largest group with 16 (25.8%) taking the pretest and 11 (25%) taking the posttest, followed by 12th graders with a pretest ranking of 24.2% (*f* = 15) and posttest ranking of 11.4% (*f* = 5).Ninth-graders came in last on the pretest (17.7%, *f* = 11) and second-to-last on the posttest (25%, *f* = 11).

In the pre-test, Caucasians made up the largest group of students, with 39 (62.9%) taking the pretest and 30 (68.2%) taking the posttest. The second largest group was Hispanic, with a pretest response of 12 (19.4%) and a posttest response of response of 8 (18.2%). The next two groups, Native American and other, had similar pretest results (6.5%, *f* = 4); however, a larger population of Native American students completed the posttest (6.8%, *f* = 3), while the number of students selecting “other” decreased in the posttest (2.3%, *f* = 1). The race with the lowest representation was Asian, with a pretest ranking of 4.8% (*f* = 3) and a posttest ranking of 4.5% (*f* = 2).

These results were very similar to the results listed from the Utah State Office of Education for the race differences in public schools. The races were listed in the following order: Caucasians at 64% (*f* =483, 109), Ethnic Minority at 17% (*f* = 127,675), Hispanics at 12% (*f* = 86,935), American Indians at 3% (*f* = 19,908), Asian students at 2% (*f* = 13, 199), Pacific Islanders at 1% (*f* = 11,116) and lastly African Americans at

again 1% of the student population (*f* = 11,107). There were approximately 752,000 students who reported in the 2011-2012 statistics (Education, 2012).

After categorizing the respondents into demographic categories, we analyzed the results to see if one gender had a higher probability of selecting an agricultural career, in accordance with objective six of the study. We found that girls had a higher correlation between gender and plans on pursing an agricultural career. A Pearson correlation coefficient indicated $r = -.35$ on the pretest, which has a significant relation with agricultural careers and the female gender. The Pearson correlation on the post-test was not found to be significant, but to still have a higher probability of girls selecting an agricultural career than their male peers. The correlation between agricultural careers and girls was found to only be a $r = -.24$ on the posttest. These are considered moderate correlations according to Davis' (1971) table on Pearson's correlation.

CHAPTER V

CONCLUSIONS

After reviewing the results of the study, the following conclusions can be made:

1. Agricultural courses do have a slight effect on changing students' career choice.
2. The majority of students still want to pursue a career as a veterinarian or another veterinary-related career after completing agricultural education courses.
3. Students feel agriculture is a rewarding career and it is well perceived.
4. Students are optimistic about the future of agriculture, but their peers are less optimistic.
5. Students feel they are more career-ready after agricultural education courses.
6. Students have realistic career goals.
7. Students are confident in the skills they learn while in agriculture classes.
8. With the current population, these results were present. However, students would need to be resampled with a different demographic group.

According to objective one, we found that students attending agricultural education classes in urban areas are confident that they want to go into an agricultural career and did not differ from that chosen career plan. Most students interested in agricultural careers chose veterinary medicine as a career path in the

pretest and were still interested in an agriculturally related career in the posttest. This is rewarding news for the agricultural industry because we are retaining the students that are interested in an agricultural career.

According to objective two, students base their career choice on the school classes in which they are enrolled. This is important to know that our careers have a large enough impact on students to whet their appetite for agriculture; however, it identifies a new thesis problem or research study. If students are not already interested in taking the course, how do we get them into the agricultural class to see if they are interested in agricultural careers? Overall, students enrolled in agriculture education feel that agriculture is a rewarding career; how do we get students to share this belief with their peers more often in order to boost enrollment in these courses? We need more and better ways to advertise our classes both to students and to those that help make course selections, such as counselors, parents and peers. As supported through the results of this study, it is not necessarily best to use media to reach students about the careers they are interested in pursuing.

Objective three was concerned with students' perceptions of agriculture and the future of agriculture. Students reported that they believed agriculture is a green career. This perception increased by 23.5% after taking an animal science agricultural class. This could be a great recruiting mechanism for students. As our world becomes more urban and more environmentally concerned, we can use this information to attract and encourage different types of interest in agricultural students.

In addition to feeling agriculture was a rewarding career and a green industry; students also felt that by choosing a career in agriculture, they would be able to make a significant impact on that world. Students did not specify what type of impact could be made, just that they felt agriculture provided a great way to make a change. After completing the course and posttest, there was only a 2-point change in attitudes on a scale of 1 to 10. This can be a great additional research question or another way to market to our students the benefits of choosing an agricultural career.

While a large percentage of students were optimistic about the future of agriculture, their perceptions of their peers' views of agriculture did not rank as high. As an industry with a large number of job openings every year and an inability to fill each position, we need to better advertise the available opportunities of agricultural careers and encourage students to talk to their peers about the experiences that they had while in agricultural classes and what they feel the world of agriculture can do for them. The largest peer-oriented concern is that agricultural careers require a lot of hard work for a small amount of compensation or pay. This is where agriculture as an industry can show that students are able to achieve as high as salary as other industries with an equally rewarding experience.

Objective four was designed to target how students ranked on the self-efficacy score and determine if the score increased on the post questionnaire. Students' scores increased slightly on the amount of self-efficacy they had, their ability to make responsible decisions regarding a career, and their ability to

prepare and accomplish their chosen career. While students' self-efficacy increased only a slight amount, the increase was noticeable. This could be because of the skills in agriculture that are listed in the state standards and objectives. Each course has students learning and participating in leadership skills. The increase in self-efficacy could also include the student-run leadership program with FFA.

Students had realistic views of what to expect when entering the workforce for the first time and how much education and salary they could expect. Most students believed they would make $0-$35,000 annual salary their first year in the workforce. While this pay is a little low for certain careers, it is a good average as to what to expect when beginning an agricultural career.

Students knew that they needed to continue their education, whether through a technical institute, trade school, college or university. All industries are demanding a more highly skilled workforce that can do more efficient work. However, it is interesting that the majority of students want to go into a career such as being a veterinarian or a veterinarian technician, but believe that they will only need a bachelor's degree to get into these types of careers. Agricultural educators need to have students identify the requirements for their desired career in agriculture. Students need to be realistic about their career options and the time cost that those careers will take to be successful.

Students are confident that they have chosen their desired careers, have worked towards an education that will support that career, and that they will have the skills necessary to obtain a job in the chosen agricultural career. It is

encouraging that students feel the class was a skill-based class, and that they can then use these skills to pursue a career in the chosen industry.

Our final objective was to correlate gender to the likelihood that students would seek a career in agriculture. In this study, females were found to have a higher correlation to choosing agricultural careers then their male counterparts; however, because of the demographics of the location, this result could be a sampling error. A similar test should be conducted in a area with different demographics to determine if our results are universal occurrences or unique to this location. This test was given to a predominantly Caucasian female group of a tenth grade age level. Similar studies should also be conducted on different grade levels to get more accurate results.

Overall, this research found agriculture to be a career that students are optimistic about and interested in. It also found that agricultural education has a slightly positive effect on students' choice to go into agricultural careers in general, but not specific agricultural careers. Our research identified a few issues the agricultural industry needs to focus on as a whole relating to marketing and recruitment. We also found that agricultural classes have a positive effect on urban high school students' career choices and on their perception of agriculture as a whole. This study identifies other research projects that could be done to increase the support and reliability of these results.

This study was based on three theoretical frameworks that serve as the foundation of this study. The first framework is Donald Super's (1980) lifespan/life space approach to career decision-making. Super's (1980) study

helped to identify and describe the attributes that influence student career choice. While Super believed that the following determinants influenced individuals' career choice, such as genetic factors, geographic location, historic, social, and economic conditions, we found agricultural classes were the strongest influence. The genetic factor consist of the environment and it situational determinants (e.g., womb, home, community) (Super, 1980). These factors act on the development of aptitudes, interests and values (Herr, 1997).

The second theory that helped guide this study is Bandura's (1997) self-efficacy theory. Career decision-making self efficacy denotes individuals' degree of confidence that they can successfully engage in tasks associated with making a career choice and committing to a career (Taylor & Betz, 1983). It is through self-efficacy that students identify if they are ready to make serious career choice decisions this study concluded that students felt they were moderately ready to make career decisions and that with the course their confidence increased.

The final foundational theory we used is John O. Crites' theory of career maturity. Crites originally identified self-appraisal, occupation information, goal selection, planning, and problem solving as the major factors concerned with career choice (Crites, 1978). These career maturity levels are achieved through the questions on the survey under the self-efficacy portion of this test. This survey again provides support that after completion of an animal science agricultural education course their career maturity increases.

Recommendations for Practice

Our recommendations are as follows according to the objectives of this study:

1. Determine the change in career choice after completion of an animal science-based agricultural education course. Students interested in pursuing a career in agriculture might change their plans of exactly career path to follow; however, they often still stay with agriculture as an industry. School-based agriculture teachers could recruit students to agriculture classes as an opportunity for career exploration. This allows students the opportunity to explore other agriculture careers. It is recommended that the Utah State Office of Education promote a stronger emphasis on career exploration utilizing agricultural education courses.
2. Determine which factors influence career choices of high school students. School-based agriculture teachers should utilize the knowledge gained from this study in recruitment and retention strategies. School-based agriculture teachers should promote to students and parents what careers are achievable and what skills are learned through completion of agriculture courses. By providing students with information about possible career options and hands-on training, we could see higher enrollment in these courses.
3. Determine student perception of agricultural careers. The Utah State Office of Education should capitalize on the opportunity to promote career exploration as a benefit in school-based agricultural education

courses to all students. The National FFA Organization should continue to utilize this information as part of its Ag Career Network system.

4. Determine students' Career Decision Self-Efficacy. The Utah State Office of Education should place a larger emphasis on career exploration in the state standards and objectives for each course to help increase students' self-efficacy scores. School-based agriculture teachers should encourage students' to learn and pursue soft skills (leadership, communication, habits, attitudes, etc.) to increase their self-efficacy scores and to increase their employability in the U.S. economy.
5. Describe characteristics of students (gender, grade, and ethnicity). Due to the low percentage of minorities that are represented in agricultural education courses, the Utah State Office of Education staff and the National FFA Organization should continue to develop promotional material to appeal to a wide variety of students to encourage agricultural education and agricultural careers as a viable course of study and career path.
6. Determine the relationship between gender and career selection. The National FFA Organization and Utah State Office of Education must be certain all promotional materials are designed for both males and females. Further highlighting equal career opportunities each. Additionally, due to the low enrollment of males, stakeholders in

agricultural education should be aware of this trend and develop recruitment strategies to encourage young men to be involved in agriculture education and agricultural careers.

Recommendations for Further Research

Our recommendations are listed here by the objectives of this study:

1. Determine the change in career choice after completion of animal science–based agricultural education course. Further research could be done to determine if plant science and agricultural leadership-based agricultural education courses have the same effect on students' career choice. Also, further research should be done to determine if students who do not attend a magnet school have the same or similar career desires of those who do.
2. Determine which factors influence career choices of high school students. Further research should be done at traditional high schools to identify other factors that influence a larger role on career choice and determine what factors encourage students to pursue an agricultural career.
3. Determine student perception of agricultural careers. Further research could be conducted to see the different perceptions about agriculture in urban versus rural schools, as well as in the difference between Utah and other states in the United States.

4. Determine students' Career Decision Self-Efficacy. Further research should be done in other states, in traditional high schools versus magnet schools, and also in other programs throughout the Career and Technical Education department and general education requirements to justify or further defend if it is agriculture or Career and Technical Education classes that increase Career Decision Self-Efficacy scores.
5. Describe characteristics of students (gender, grade, and ethnicity). Additional research should be conducted nationwide in agricultural education to determine the role gender and ethnicity play in enrollment and career choice in agriculture.
6. Determine the relationship between gender and career selection. Finally, further research should be done to see if the gender and career selection correlation was connected to the high level of girls in the agricultural education program or if it was independent of the other objectives. This correlation should also be researched in rural communities and other states.

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APPENDIX

Appendix A. Urban Areas and Urban Clusters in Utah

City Name	Population	Classification
Salt Lake City/ West Valley City	1,021,243	Urban Area
Ogden/Layton	546,026	Urban Area
Provo/Orem	482,819	Urban Area
St. George	98,370	Urban Area
Logan	94,983	Urban Area
Cedar City	33,200	Urban Cluster
Tooele	31,058	Urban Cluster
Vernal	17,321	Urban Cluster
Heber	17,212	Urban Cluster
Hurricane	16,336	Urban Cluster
Price	14,187	Urban Cluster
Park City	13,352	Urban Cluster
Santaquin	9,936	Urban Cluster
Tremonton	9,890	Urban Cluster
Stansbury Park	9,061	Urban Cluster

Richfield	7,340	Urban Cluster
Moab	6,883	Urban Cluster
Grantsville	6,673	Urban Cluster
Eagle Mountain South	6,277	Urban Cluster
Summit Park	6,088	Urban Cluster
Roosevelt	5,915	Urban Cluster
Ephraim	5,781	Urban Cluster
Nephi	5,249	Urban Cluster
Gunnison	4,157	Urban Cluster
Morgan	3,518	Urban Cluster
Manti	3,290	Urban Cluster
Blanding	3,264	Urban Cluster
Delta	3,258	Urban Cluster
Kanab	3,212	Urban Cluster
Mount Pleasant	3,207	Urban Cluster
Castle Dale	2,893	Urban Cluster

Beaver	2,882	Urban Cluster
Kamas	2,645	Urban Cluster
Parowan	2,551	Urban Cluster
Colorado City, AZ—UT	2,397	Urban Cluster
West Wendover/Nevada	1,121	Urban Cluster

Appendix B. Instrument

What are the first two letters of your mother's maiden name?

What is the two digit DAY of the month you were born in? (e.g. if I were born on February 4, I would answer 04).

What are the last two letters of your last name?

What is your grade in school?

- 9th
- 10th
- 11th
- 12th

What is your gender?

- Male
- Female

With which of the following ehtnic or cultural groups do you most identify?

- Caucasian
- African American
- Native American
- Asian
- Hispanic
- Other

How much confidence do you have that you could: (all questions are taken from mindgarden.com)

	No Confidence at all	Very Little Confidence	Moderate Confidence	Much Confidence	Complete Confidence
Use the Internet to find information about occupations that interest you?	☐ How much confidence do you have that you could: (all questions are taken from mindgarden.com) Use the Internet to find information about occupations that interest you? No Confidence at all	☐ Use the Internet to find information about occupations that interest you? Very Little Confidence	☐ Use the Internet to find information about occupations that interest you? Moderate Confidence	☐ Use the Internet to find information about occupations that interest you? Much Confidence	☐ Use the Internet to find information about occupations that interest you? Complete Confidence
Select one major from a list of potential majors you are considering?	☐ How much confidence do you have that you could: (all questions are taken from mindgarden.com) Select one major from a list of potential majors you are considering? No Confidence at all	☐ Select one major from a list of potential majors you are considering? Very Little Confidence	☐ Select one major from a list of potential majors you are considering? Moderate Confidence	☐ Select one major from a list of potential majors you are considering? Much Confidence	☐ Select one major from a list of potential majors you are considering? Complete Confidence
Make a plan of your goals for the next five years?	☐ How much confidence do you have that you could: (all questions are taken from mindgarden.com)	☐ Make a plan of your goals for the next five years? Very Little	☐ Make a plan of your goals for the next five years? Moderate	☐ Make a plan of your goals for the next five years? Much Confidence	☐ Make a plan of your goals for the next five years? Complete

	No Confidence at all	Very Little Confidence	Moderate Confidence	Much Confidence	Complete Confidence
	Make a plan of your goals for the next five years? No Confidence at all	Confidence	Confidence		Confidence
Determine the steps to take if you are having academic trouble with an aspect of your chosen major?	How much confidence do you have that you could: (all questions are taken from mindgarden.com) Determine the steps to take if you are having academic trouble with an aspect of your chosen major? No Confidence at all	Determine the steps to take if you are having academic trouble with an aspect of your chosen major? Very Little Confidence	Determine the steps to take if you are having academic trouble with an aspect of your chosen major? Moderate Confidence	Determine the steps to take if you are having academic trouble with an aspect of your chosen major? Much Confidence	Determine the steps to take if you are having academic trouble with an aspect of your chosen major? Complete Confidence
Accurately assess your abilities?	How much confidence do you have that you could: (all questions are taken from mindgarden.com) Accurately assess your abilities? No Confidence at all	Accurately assess your abilities? Very Little Confidence	Accurately assess your abilities? Moderate Confidence	Accurately assess your abilities? Much Confidence	Accurately assess your abilities? Complete Confidence
Select one occupation from a list of potential occupations you are considering?	How much confidence do you have that you could: (all questions are	Select one occupation from a list of potential	Select one occupation from a list of potential	Select one occupation from a list of potential	Select one occupation from a list of potential

	No Confidence at all	Very Little Confidence	Moderate Confidence	Much Confidence	Complete Confidence
	taken from mindgarden.com) Select one occupation from a list of potential occupations you are considering? No Confidence at all	occupations you are considering? Very Little Confidence	occupations you are considering? Moderate Confidence	occupations you are considering? Much Confidence	occupations you are considering? Complete Confidence
Determine the steps you need to take to successfully complete your chosen major?	How much confidence do you have that you could: (all questions are taken from mindgarden.com) Determine the steps you need to take to successfully complete your chosen major? No Confidence at all	Determine the steps you need to take to successfully complete your chosen major? Very Little Confidence	Determine the steps you need to take to successfully complete your chosen major? Moderate Confidence	Determine the steps you need to take to successfully complete your chosen major? Much Confidence	Determine the steps you need to take to successfully complete your chosen major? Complete Confidence
Persistently work at your major or career goal even when you get frustrated?	How much confidence do you have that you could: (all questions are taken from mindgarden.com) Persistently work at your major or career goal even when you get frustrated? No	Persistently work at your major or career goal even when you get frustrated? Very Little Confidence	Persistently work at your major or career goal even when you get frustrated? Moderate Confidence	Persistently work at your major or career goal even when you get frustrated? Much Confidence	Persistently work at your major or career goal even when you get frustrated? Complete Confidence

	No Confidence at all	Very Little Confidence	Moderate Confidence	Much Confidence	Complete Confidence
Determine what your ideal job would be?	Confidence at all ☐ How much confidence do you have that you could: (all questions are taken from mindgarden.com) Determine what your ideal job would be? No Confidence at all	☐ Determine what your ideal job would be? Very Little Confidence	☐ Determine what your ideal job would be? Moderate Confidence	☐ Determine what your ideal job would be? Much Confidence	☐ Determine what your ideal job would be? Complete Confidence
Find out the employment trends for an occupation in the next decade?	☐ How much confidence do you have that you could: (all questions are taken from mindgarden.com) Find out the employment trends for an occupation in the next decade? No Confidence at all	☐ Find out the employment trends for an occupation in the next decade? Very Little Confidence	☐ Find out the employment trends for an occupation in the next decade? Moderate Confidence	☐ Find out the employment trends for an occupation in the next decade? Much Confidence	☐ Find out the employment trends for an occupation in the next decade? Complete Confidence
Choose a career that will fit your preferred lifestyle?	☐ How much confidence do you have that you could: (all questions are taken from mindgarden.com) Choose a career that will fit your preferred	☐ Choose a career that will fit your preferred lifestyle? Very Little Confidence	☐ Choose a career that will fit your preferred lifestyle? Moderate Confidence	☐ Choose a career that will fit your preferred lifestyle? Much Confidence	☐ Choose a career that will fit your preferred lifestyle? Complete Confidence

	No Confidence at all	Very Little Confidence	Moderate Confidence	Much Confidence	Complete Confidence
	lifestyle? No Confidence at all				
Prepare a good resume?	 How much confidence do you have that you could: (all questions are taken from mindgarden.com) Prepare a good resume? No Confidence at all	 Prepare a good resume? Very Little Confidence	Prepare a good resume? Moderate Confidence	Prepare a good resume? Much Confidence	Prepare a good resume? Complete Confidence
Change majors if you did not like your first choice?	 How much confidence do you have that you could: (all questions are taken from mindgarden.com) Change majors if you did not like your first choice? No Confidence at all	 Change majors if you did not like your first choice? Very Little Confidence	Change majors if you did not like your first choice? Moderate Confidence	Change majors if you did not like your first choice? Much Confidence	Change majors if you did not like your first choice? Complete Confidence
Decide what you value most in an occupation?	 How much confidence do you have that you could: (all questions are taken from mindgarden.com) Decide what you value most in an occupation? No Confidence at all	 Decide what you value most in an occupation? Very Little Confidence	Decide what you value most in an occupation? Moderate Confidence	Decide what you value most in an occupation? Much Confidence	Decide what you value most in an occupation? Complete Confidence

	No Confidence at all	Very Little Confidence	Moderate Confidence	Much Confidence	Complete Confidence
Find out about the average yearly earnings of people in an occupation?	How much confidence do you have that you could: (all questions are taken from mindgarden.com) Find out about the average yearly earnings of people in an occupation? No Confidence at all	Find out about the average yearly earnings of people in an occupation? Very Little Confidence	Find out about the average yearly earnings of people in an occupation? Moderate Confidence	Find out about the average yearly earnings of people in an occupation? Much Confidence	Find out about the average yearly earnings of people in an occupation? Complete Confidence
Make a career decision and then not worry whether it was right or wrong?	How much confidence do you have that you could: (all questions are taken from mindgarden.com) Make a career decision and then not worry whether it was right or wrong? No Confidence at all	Make a career decision and then not worry whether it was right or wrong? Very Little Confidence	Make a career decision and then not worry whether it was right or wrong? Moderate Confidence	Make a career decision and then not worry whether it was right or wrong? Much Confidence	Make a career decision and then not worry whether it was right or wrong? Complete Confidence
Change occupations if you are not satisfied with the one you enter?	How much confidence do you have that you could: (all questions are taken from mindgarden.com) Change occupations if	Change occupations if you are not satisfied with the one you enter? Very Little Confidence	Change occupations if you are not satisfied with the one you enter? Moderate Confidence	Change occupations if you are not satisfied with the one you enter? Much Confidence	Change occupations if you are not satisfied with the one you enter? Complete Confidence

	No Confidence at all	Very Little Confidence	Moderate Confidence	Much Confidence	Complete Confidence
	you are not satisfied with the one you enter? No Confidence at all				
Figure out what you are and are not ready to sacrifice to achieve your career goals?	How much confidence do you have that you could: (all questions are taken from mindgarden.com) Figure out what you are and are not ready to sacrifice to achieve your career goals? No Confidence at all	Figure out what you are and are not ready to sacrifice to achieve your career goals? Very Little Confidence	Figure out what you are and are not ready to sacrifice to achieve your career goals? Moderate Confidence	Figure out what you are and are not ready to sacrifice to achieve your career goals? Much Confidence	Figure out what you are and are not ready to sacrifice to achieve your career goals? Complete Confidence
Talk with a person already employed in a field you are interested in?	How much confidence do you have that you could: (all questions are taken from mindgarden.com) Talk with a person already employed in a field you are interested in? No Confidence at all	Talk with a person already employed in a field you are interested in? Very Little Confidence	Talk with a person already employed in a field you are interested in? Moderate Confidence	Talk with a person already employed in a field you are interested in? Much Confidence	Talk with a person already employed in a field you are interested in? Complete Confidence
Choose a major or career that will fit your interests?	How much confidence do you have that	Choose a major or career that	Choose a major or career that	Choose a major or career that	Choose a major or career that

	No Confidence at all	Very Little Confidence	Moderate Confidence	Much Confidence	Complete Confidence
	you could: (all questions are taken from mindgarden.com) Choose a major or career that will fit your interests? No Confidence at all	will fit your interests? Very Little Confidence	will fit your interests? Moderate Confidence	will fit your interests? Much Confidence	will fit your interests? Complete Confidence
Identify employers, firms, and institutions relevant to your career possibilities?	How much confidence do you have that you could: (all questions are taken from mindgarden.com) Identify employers, firms, and institutions relevant to your career possibilities? No Confidence at all	Identify employers, firms, and institutions relevant to your career possibilities? Very Little Confidence	Identify employers, firms, and institutions relevant to your career possibilities? Moderate Confidence	Identify employers, firms, and institutions relevant to your career possibilities? Much Confidence	Identify employers, firms, and institutions relevant to your career possibilities? Complete Confidence
Define the type of lifestyle you would like to live?	How much confidence do you have that you could: (all questions are taken from mindgarden.com) Define the type of lifestyle you would like to live? No Confidence at all	Define the type of lifestyle you would like to live? Very Little Confidence	Define the type of lifestyle you would like to live? Moderate Confidence	Define the type of lifestyle you would like to live? Much Confidence	Define the type of lifestyle you would like to live? Complete Confidence

	No Confidence at all	Very Little Confidence	Moderate Confidence	Much Confidence	Complete Confidence
Find information about graduate or professional schools?	How much confidence do you have that you could: (all questions are taken from mindgarden.com) Find information about graduate or professional schools? No Confidence at all	Find information about graduate or professional schools? Very Little Confidence	Find information about graduate or professional schools? Moderate Confidence	Find information about graduate or professional schools? Much Confidence	Find information about graduate or professional schools? Complete Confidence
Successfully manage the job interview process?	How much confidence do you have that you could: (all questions are taken from mindgarden.com) Successfully manage the job interview process? No Confidence at all	Successfully manage the job interview process? Very Little Confidence	Successfully manage the job interview process? Moderate Confidence	Successfully manage the job interview process? Much Confidence	Successfully manage the job interview process? Complete Confidence
Identify some reasonable major or career alternatives if you are unable to get your first choice?	How much confidence do you have that you could: (all questions are taken from mindgarden.com) Identify some reasonable major or career alternatives if you are unable to	Identify some reasonable major or career alternatives if you are unable to get your first choice? Very Little	Identify some reasonable major or career alternatives if you are unable to get your first choice? Moderate	Identify some reasonable major or career alternatives if you are unable to get your first choice? Much	Identify some reasonable major or career alternatives if you are unable to get your first choice? Complete

	No Confidence at all	Very Little Confidence	Moderate Confidence	Much Confidence	Complete Confidence
get your first choice? No Confidence at all	Confidence	Confidence	Confidence	Confidence	

What is your preferred method of learning about career opportunities?

- ☐ Newspaper and periodicals
- ☐ Internet Job Boards
- ☐ Company Website
- ☐ Family/ Friends
- ☐ Guidance Counselor/ Career Services
- ☐ School Courses
- ☐ Organizations/ Extracurricular
- ☐ Other, Please Specify

What do you perceive will be the skills that will ultimately land you a job? (Mark all that apply.)

- ☐ Practical work experience/Internships
- ☐ Networking
- ☐ Leadership Skills
- ☐ Communication Skills
- ☐ Choice of Major
- ☐ Academic Excellence
- ☐ Other, please specify

What are your salary expectations in U.S. dollars for your first job?

- ☐ $0-35,000
- ☐ $36,000-45,000
- ☐ $46,000-55,000

- ☐ $56,000-65,000
- ☐ $66,000 and greater
- ☐ Already in the workforce

What is the highest level of education you think you'll need to obtain to get the job you desire to have?

- ☐ High School
- ☐ 2 year/ Technical
- ☐ 4 year/ bachelors
- ☐ Masters
- ☐ Doctorate

How confident are you that you will receive a job upon graduation?

Extremely Uncertain	Uncertain	Not Sure	Confident	Extremely Confident
☐	☐	☐	☐	☐

Do you plan on pursuing a career in agriculture?

- ☐ Yes
- ☐ No

What career are you interested in pursuing?

How do you feel about the career opportunities in agriculture and food? (Choose all that apply)

- ☐ Optimistic about the number of opportunities available
- ☐ Rewarding opportunities that provide good benefits
- ☐ Neutral- no different than opportunities in other industries
- ☐ Production focused
- ☐ Limited number of opportunities

- ☐ Hard work and little pay
- ☐ An easy place to get a job
- ☐ Other, please specify ☐

How do you feel your peers view career opportunities in agriculture and food? (Choose all that apply)

- ☐ Optimistic about the number of opportunities available
- ☐ Rewarding opportunities that provide good benefits
- ☐ Neutral- no different than opportunities in other industries
- ☐ Production focused
- ☐ Limited Number of opportunities
- ☐ Hard work and little pay
- ☐ An easy place to get a job
- ☐ Other, please specify ☐

Do you consider agricultural careers 'green industry' careers?

- ☐ Yes
- ☐ No

On a scale of 1 to 5 (5 being the most encouraged), how encouraged or discouraged are you about the future of agriculture?

Extremely Discouraged	Discouraged	Not sure	Encouraged	Extremely encouraged
☐	☐	☐	☐	☐

To what extent do you feel a career in agriculture will allow you to make a significant impact in providing food and fiber for the world? Rate your opinion on a scale of 1-10 with 1 being the least significant and 10 equaling the most significant impact.

1 Lest significant	2	3	4	5 Neutral	6	7	8	9	10 Most Significant

Appendix C. IRB Certification

UtahState University
College of Agriculture
4800 Old Main Hill
Logan UT 84322-4800
Telephone: (435) 797-1254

Page 1 of 2
USU IRB Approval: Jan. 17, 2013
Approval Terminates: 01/18/2014
Protocol #4886
IRB Password Protected per IRB Administrator

Letter of Information
Effects of Agricultural Education on Urban High School Students Career Choice

Introduction/ Purpose Dr. Rebecca Lawver in the School of Applied Sciences, Technology and Education, and Kristina Gowans at Utah State University are conducting a research study to find out what effect agricultural courses have career choice. Your student has been asked to take part because s/he is enrolled in an agricultural course. There will be approximately 200 participants at Granite Technical Institute. The 200 students at this site are comprised of students who attend 9 high schools, 3 specialized schools and 16 junior high schools. The students who attend Granite Technical Institute are bused to our site for their agriculture classes. There will be approximately 200 total participants in this research.

Procedures Your student will be asked to complete an online questionnaire of approximately 50 questions on two occasions; once in January and again in May of 2013. It will take approximately 20 minutes to complete during each session, during classroom time.

New Findings New findings from this research will be published after it is completed. If you are interested, you may obtain the results of the study by contacting the student researcher.

Risks There is minimal risk in participating in this study. There is a chance for breach of confidentiality but steps have been taken to minimize this risk. Further information is provided below under "Confidentiality."

Benefits There may not be any direct benefit to your student's participation; however, the researchers may learn more about what effect agricultural courses have on career choice.

Explanation & offer to answer questions The Student Researcher MS. Gowans, has explained this research study to students and has answered questions. If you, as a parent, have other questions or research-related problems, you may contact Rebecca Lawver at (435) 797-1254 or by e-mail at rebecca.lawver@usu.edu

Voluntary nature of participation and right to withdraw without consequence Participation in research is entirely voluntary. You may refuse to have your student participate or withdraw him/her at any time without consequence or loss of benefits.

Confidentiality Research records will be kept confidential, consistent with federal and state regulations. Only Dr. Lawver, and Kristina Gowans will have access to the data which will be kept in a locked file cabinet or on a password protected computer in a locked room. To protect the privacy of your student, personal, identifiable information will be removed from study documents and replaced with a study identifier. Identifying information will be stored separately from data. At the conclusion of the study, the study identifier linking your student to this research will be destroyed. The data will be kept indefinitely with no identifiable information. The information collected will be reported as a group and will not be linked to a specific participant.

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USU IRB Approval: Jan. 17, 2013
Approval Terminates: 01/18/2014
Protocol #4886
IRB Password Protected per IRB Administrator

Letter of Information
Effects of Agricultural Education on Urban High School Students Career Choice

IRB Approval Statement The Institutional Review Board for the protection of human participants at Utah State University has approved this research study. If you have any questions or concerns about your rights or a research-related injury and would like to contact someone other than the research team, you may contact the IRB Administrator at (435) 797-0567 or email irb@usu.edu to obtain information or to offer input.

Investigator Statement "I certify that the research study has been explained in this Letter of Information. If there are questions or concerns about this study, parents / guardians may contact the researchers. This letters provides information about the nature and purpose, the possible risks and benefits associated with taking part in this research study. "

Rebecca G. Lawver
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Kristina Gowans
Graduate Student Researcher
435-830-3412
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Opt-out Statement: If you do not want your student to participate in this research please sign below and provide the name of your student.

Parent/Guardian Signature

Date

Student's Name (print)