Walden Dissertations and Doctoral Studies

2015

Increasing Student Interest in Poultry Science Careers Through 4-H

Peggy Lynn Armstrong
Walden University

Walden University

COLLEGE OF EDUCATION

This is to certify that the doctoral study by

Peggy Armstrong

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Jerita Whaley, Committee Chairperson, Education Faculty
Dr. Efthimia Christie, Committee Member, Education Faculty
Dr. Rachel Pienta, University Reviewer, Education Faculty

Chief Academic Officer

Eric Riedel, Ph.D.

Walden University
2015

Abstract

Increasing Student Interest in Poultry Science Careers Through 4-H

by

Peggy Lynn Armstrong

MS, University of Georgia, 2006

BSA, University of Georgia, 2004

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Education

Walden University

August 2015

Abstract

The demand for poultry science graduates to fill available positions in the poultry industry continues to increase. At the same time, there are not enough graduates to fill the positions. The purpose of this study was to investigate the implementation of the poultry curriculum in the 4-H program and student recruitment through the 4-H program into the Poultry Science Department. The targeted populations were 4-H leaders who implement the poultry curriculum and university students who were currently studying poultry. Career development theories suggest that previous experiences during adolescence can be a major influence in future vocation choice. A mixed methods formative evaluation design was used to gather data from 4-H leaders and university students. Data were collected through Likert-type surveys from 79 of the 158 4-H leaders across the state who indicated that they implement the poultry curriculum. A purposeful sampling technique was used to select 13 university students who are majoring in poultry science for structured interviews. The survey data were analyzed using descriptive statistics and the interview data were analyzed coding for themes. Key findings from the survey indicated that 48% of the 4-H leaders considered their poultry curriculum training and implementation inadequate. The majority of university students chose to major in poultry science in response to prior experience. Positive social change for an increase of graduates in poultry science may be achieved through the professional development project career awareness training for 4-H leaders and the supportive follow-up through the network of the professional learning community to improve student recruitment.

Increasing Student Interest in Poultry Science Careers Through 4-H

by

Peggy Lynn Armstrong

MS, University of Georgia, 2006

BSA, University of Georgia, 2004

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Education

Walden University

August 2015

Table of Contents

List of Tables

List of Figures

Section 1: The Problem

Introduction

According to researchers, Colleges of Agriculture (COA) have experienced a decline in student enrollment (Esters & Bowen, 2005). According to Goecker, Smith, Smith, and Goetz (2010) employment opportunities in agricultural areas continue to rise. This situation has led one local university department to reexamine the recruitment resources it is using to increase enrollment, and consequently, to also reconsider the number of graduates required to fill the poultry industry's needs. The University of Georgia has had difficulty recruiting students into the Poultry Science Department (PSD).

Definition of the Problem

The demand for poultry science graduates to fill available positions in the poultry industry has increased in previous years. There are not enough university graduates to fill the positions. The 4-H Youth Development Program (4-H) is one of the resources utilized by the university to help recruit students and is the program of interest for this study (University of Georgia, 2009).

The on-campus Avian Adventures program is available to high school students entering their junior or senior year (University of Georgia, n.d.). It is a three-day summer program in the PSD where high school students interact with faculty, staff, and graduate students while learning about physiology, microbiology, management, reproductive physiology, behavior, endocrinology, and biotechnology related to poultry. The program at the university accepts 25-30 students per year and has added a second Avian Adventures program at one of the university's satellite campuses. The program helps

recruit 2-3 students a year who choose poultry science as their major in college (Schupska, 2010).

The Young Scholars Internship Program is a two-year internship and competitive program for high school juniors and seniors that involves them in research projects with university faculty members (University of Georgia, 2011). It is a college-wide initiative to attract students into agricultural careers. The USDA funds this program; the number of students accepted depends on available funding for the year. In 2011, for example, the PSD received four interns (two high school juniors and two high school seniors) who worked in paid research positions with faculty for six weeks over the summer. The interns compete for research awards in oral and poster presentations at the end of their internships. Second-year interns get the opportunity to travel abroad to the university's remote research laboratories in places like Costa Rica, Honduras, and Ghana.

Despite these efforts, there remains a shortage of students interested in pursuing a degree in poultry science. Factors that could be contributing to the problem include lack of access to K-12 agricultural education, the quality of K-12 agricultural education programs, poor implementation of the programs, inadequate leadership recruitment and training, and the lack of awareness or negative perceptions of poultry science as a career choice. This study will contribute to the body of knowledge needed to address the problem by identifying the areas that must be improved to make the 4-H program in Georgia a better recruitment resource for the PSD.

The state of Georgia is recognized by the world poultry industry as a leading region (Georgia House of Representatives, 1997). In 1995, the state's General Assembly

designated Georgia "the Poultry Capital of the World" (Georgia House of Representatives, 1997). Poultry is the largest segment (54%) of Georgia's agriculture production and a major part of the state's economy (Georgia Poultry Federation, 2010). Georgia produces 9.2 million table eggs, 7.8 million hatching eggs, and processes 26 million pounds of chicken daily (U.S. Poultry and Association, 2010). Not only is Georgia the top poultry-producing state—if Georgia were a nation, it would rank fifth highest in the world among poultry-producing countries, with the United States the top producer (Georgia House of Representatives, 1997).

One might expect that a top-ranking land-grant university, with the only PSD in the state, would have a large number of students enrolled to fill the poultry industry's positions. Unfortunately, that has not been the case; the department has had difficulty recruiting the number of poultry science students adequate to meet the needs of the poultry industry (M. Lacy, personal communication, January 27, 2011). Currently, the department's extension service utilizes several programs, including 4-H, Future Farmers of America (FFA), Avian Adventures, and the Young Scholars Internship Program, to help recruit students (University of Georgia, 2009).

Of the four programs, 4-H is one of the most successful programs used as a recruitment resource for the PSD. There are over 170,000 youth members in 158 of Georgia's 159 counties, and the program is available to most of Georgia's youth between the ages of nine and 19 (Georgia 4-H Fact Sheet, n.d.). Future Farmers of America is the second largest, serving over 31,000 students in 149 counties (Georgia FFA Association,

2011). The Avian Adventures and Young Scholars programs are much smaller efforts conducted by the COA in the PSD building on campus.

The recruitment program of 4-H is a youth development program administered through the Cooperative Extension Service and associated with land-grant universities as an extension of the United States Department of Agriculture (USDA) (National 4-H Council, 2010). The curricula of 4-H and activities are intended to help youth acquire life skills, experiential knowledge, and behavioral attitudes that will help them become self-directing, productive, and contributing members of their communities.

Future Farmers of America is an agricultural youth development program available through some schools (National FFA Organization, 2011). Most schools with agricultural programs have FFA chapters, and the program is available to middle and high school students in Georgia. Future Farmers of America's goal is to help students develop their leadership skills, enhance their personal growth, and increase their career success through agricultural education. Agriculture teachers serve as FFA leadership and the leadership implements the program.

<div align="center">**Rationale**</div>

Evidence of the Problem at the Local Level

The head of the PSD receives requests from employers seeking new poultry science graduates via phone calls and emails (M. Lacy, personal communication, January 27, 2011). However, there are often too few graduates to fill the positions. The Department maintains a job posting board in the student commons area, so students are aware of employment opportunities. In general, poultry science students have multiple

job offers to consider when they complete the program. The department chair believes that 75 poultry science students enrolled at any given time, resulting in 17-18 graduates per year, would be an adequate number trained for jobs in the industry (M. Lacy, personal communication, January 27, 2011).

To bring new recruits to the department, the PSD created a new degree program in 2004. Prior to the addition of this new degree program, the average number of poultry science students was 20 (University of Georgia, 2009). The program added a new avian biology major and the numbers have more than doubled; however, the new students usually do not enter the poultry industry workforce. The avian biology student concentrates on the scientific disciplines associated with avian species rather than the business aspects of the industry covered by the poultry science curriculum. Typically, avian biology students go on to graduate or professional studies at veterinary, medical, or dental schools. While the number of avian biology students increases the size of the department overall, few graduates are meeting the needs of the poultry industry as is shown in Figure 1.

Figure 1. Fall semester enrollment for students in poultry science and avian biology majors. Source: *Program Review 2009*, Poultry Science Department, University of Georgia.

There are on average eight PSD graduates per year. The department had 56 Poultry Science graduates between the Fall Semester of 2002 and the Spring Semester of 2009 (University of Georgia, 2009). Of those students, 29 are working for poultry companies, nine went to graduate schools, eight went to professional schools (veterinary, medical, and dental), seven went to work in allied industries supporting the poultry industry, one is self-employed in the poultry industry, one is an elementary school teacher, and one did not reply regarding employment status.

The PSD has also graduated an average of eight avian biology students per year, with the number continuing to climb since the program began in 2004 (University of Georgia, 2009). From the program inception until the spring of 2009, there were 46 avian biology graduates. Of those 46 graduates, 20 went on to professional school (veterinary, medical, and dental), 13 continued their education and went on to graduate school in a poultry field, five went to work in veterinary clinics, three went into the poultry industry, two went into research, and the situations of three others are unknown.

As the data in Figure 1 show, there are a limited number of poultry science students enrolled who will be available upon graduation to fill poultry industry jobs. It is imperative that the PSD recruit more students seeking not only a degree in poultry science but also employment in the poultry industry. Because there remains low interest in poultry science careers despite many students participating in the 4-H program, it is crucial to examine how the poultry component of the 4-H program is implemented. The results of this research will provide recommendations for improvements in the 4-H program. These improvements will lead to an increase in graduates with poultry science degrees who are likely to pursue poultry-industry careers.

Evidence of the Problem in the Professional Literature

There were no published studies found regarding the lack of college graduates entering the poultry industry or how the poultry component of the 4-H program may influence the number of students seeking a degree in poultry science. In a recent report, the USDA projected a 15% increase in the number of jobs available to college graduates in food and agriculture occupations over the next five years (Goecker et al., 2010). Data from the report also suggested that there is likely to be a shortage of college graduates to fill needed positions.

<div align="center">

Definitions

</div>

Cooperative Extension Service: The Smith-Lever Act of 1914 established the Cooperative Extension Service to provide informal adult education in agriculture and home economics using the research findings from land-grant universities (FFA, 1975).

Land-grant university: Land-grant universities were formed following the Morrill Act of 1862, which provided federal lands to states to establish public colleges that offered education in engineering, home economics, and agriculture. Each state in the United States has at least one land-grant university (FFA, 1975).

Poultry science: The area of science, which applies principles of biology, chemistry, or physics to management, health, and production of poultry and poultry products. (National Center for Education Statistics, 2010).

Significance

The inadequate number of college graduates with poultry science degrees available to the industry could potentially affect millions of people in the United States and internationally by increasing the costs of poultry and poultry-related products (M. Lacy, personal communication, January 27, 2011). In 2007, individuals in the United States consumed approximately 85 pounds of chicken per capita compared to 61 pounds of beef and 50 pounds of pork (U.S. Poultry & Egg Association, 2011). In 2007, chicken was the most affordable meat source, at an average of $1.64 per pound, compared to beef and pork at $4.15 and $2.90 per pound, respectively (U.S. Poultry & Egg Association, 2011). In the same year, consumers spent an average of 1.7% of their disposable income on meat and poultry products, which accounted for 29.7% of their total food budget (U.S. Poultry & Egg Association, 2011). These statistics reflect the consumption and cost of meat only within the United States; they do not take into account the 6.8 billion pounds of chicken the United States exported to other countries in 2009 and the 246 eggs

consumed per capita in the United States. in that year (U.S. Poultry & Egg Association, 2011).

Poultry science graduates are crucial to the industry's success in delivering safe and affordable food products to the consumer. These educated individuals work as supervisors, managers, teachers and researchers for the poultry industry. They often oversee the production and management of breeders, broilers, or layers, and work with individual growing farms in the field. They may also work as supervisors and managers in hatcheries, feed mills, and processing and further-processing plants. Some continue their education and support the industry through research in nutrition, genetics, biotechnology, physiology, products technology, parasitology, toxicology, microbiology, and molecular biology (University of Georgia, n.d.).

Research Question

The central research question for this study is the following: How can 4-H better facilitate recruitment of students into poultry programs at COAs? No past research has been conducted addressing this question; therefore, there is a gap in the research. A formative program evaluation is needed to answer the central research question by examining the 4-H program and operations.

The following questions are subsumed under the main questions above, as shown below:

Background

1. How many youth participants are involved in the poultry component of the 4-H program?

Staff Selection and Training

2. How are leaders selected and trained to implement the poultry component of the

    4-H program?

    - What characteristics do leaders possess?

    - What training opportunities are available to leaders?

Poultry Curriculum Implementation

3. Is the published national 4-H poultry curriculum implemented in the Georgia

    poultry component of the 4-H program?

    - Do 4-H leaders use the national 4-H poultry curriculum?

    - Are published resources adequate for 4-H leaders and participants?

General

4. How are parents and other community members involved in the poultry

    component of the 4-H program?

5. What poultry skills do youth members learn by participating in the poultry

    component of the 4-H program?

6. When and where is the poultry component of the 4-H program implemented?

College major choices

7. What factors influence students to choose poultry science as their major in

    college?

8. When do students decide to pursue a degree in poultry science?

9. What employment opportunities do poultry science graduates seek?

Review of the Literature

The purpose of this review is to examine the literature pertaining to 4-H and its role in participant career development and career choice. This discussion begins with agriculture literacy, and continues with the history and structure of the 4-H program. The theoretical and conceptual framework for the study follows, including career theory and experiential learning models. Finally, literature related to the problem is discussed.

Agricultural Literacy

It appears that schools may not be effective in teaching students about agrifood systems. Hess and Trexler (2011) found that many urban elementary students could not accurately tell researchers where common food items originated. Few students had grown a plant or cared for an animal. In addition, although students had reported going on field trips to farms, they could not explain the process of how food travels from the source to the consumer.

Nkembe (2012) conducted semistructured interviews with third through fifth grade students in Georgia in a small-scale qualitative study. The data showed that students had a limited understanding of basic knowledge of agriculture. Students who lived in urban areas were more knowledgeable than those from more rural areas.

All fifth grade students in Georgia are required to participate in 4-H. Nkembe (2012) recommended further research to determine why students were not learning more about agriculture from 4-H after finding that only 50% of the fifth grade students indicated they had learned about agriculture in 4-H. The conclusion was misleading because the sample of fifth grade students consisted of two students.

Although many public schools offer agriculture programs, most college students do not possess agricultural literacy. A study conducted to assess the agricultural literacy of college freshman showed lack of knowledge (Colbath & Morris, 2010). Literacy scores were calculated using a multiple-choice test with a score of 70% considered having adequate knowledge. Of the 501 participants, 14.4% scored 70% or higher and the average score was 50.4%. Eighty-eight students reported taking agriculture classes in high school and their scores were higher (54.1%) than students who had not taken agriculture classes (49.6%).

The 4-H Youth Development Program

The 4-H program is one of the oldest youth development organizations in the United States and officially began in 1902 (National 4-H Council, 2010). The program was developed based on the idea that young people were more accepting than adults in their communities of new ideas in agriculture developed at public research universities (National 4-H Council, 2011). 4-H introduced agricultural technologies to communities by allowing young people to experiment with hands-on learning activities (National 4-H Council, 2010). The youth then shared their experiences and knowledge with parents and other adults in their communities (National 4-H Council, 2010).

The earliest clubs grew corn and tomatoes (National 4-H Council, 2010). Jessie Field Shambaugh created a pin in 1910: a green four-leaved clover carrying an "H" on each leaf (National 4-H Council, 2010). The "H" symbolizes the four words Head, Heart, Hands, and Health, which are part of the 4-H pledge (National 4-H Council, 2010). The clover was adopted as the emblem for 4-H in 1924.

In 1914, 4-H became a national youth program after the passage of the Smith-Lever Act, whereby Congress established the Cooperative Extension System (CES) as part of the United States Department of Agriculture (USDA) (National 4-H Council, 2010). The CES scope and purpose includes working with youth clubs involved in agriculture, home economics, and related areas. The program has since evolved to include curricula in 180 different areas of healthy living, citizenship, and Science, Technology, Engineering, and Mathematics (STEM).

Georgia 4-H headquarters offices are located on university campuses (Georgia 4-H, 2011). The pertinent departments house CES faculty members as well; the Poultry Science department includes seven CES faculty members who assist in training 4-H personnel and hosting and judging 4-H competitions (University of Georgia, 2009). The department provides expertise in developing and revising the 4-H poultry curriculum. It also supplies the birds and eggs to 4-H groups for training boys and girls in poultry evaluation disciplines.

Of the reported 170,000 youth members in Georgia, only 43,000 are involved in the agricultural sciences curriculum that 4-H offers (Georgia 4-H Council, n.d.). Local schools host most (94%) of the 4-H meetings, and instructional time during the school day is allotted for the meetings (Georgia 4-H Council, n.d.). Because 4-H personnel make scheduled classroom visits to implement the curricula, teachers are not expected to be familiar with all the 4-H curriculum areas.

Federal, state, and county money fund the 4-H program (Georgia 4-H Council, n.d.). All, but one, Georgia county has at least one CES agent who may administer 4-H

programs; more often, they are administered by local volunteers trained to implement the curricula. Counties that provide adequate financial resources may also have additional CES 4-H agents who provide the programs to the youth.

The National 4-H Council provides a written curriculum for over 180 missions areas (National 4-H Council, n.d.). Experts in these areas and educators work together to create the curricula supplied by the Council. The Council uses a five-step experiential learning model to teach life skills, using the project subject matter as the vehicle. The targeted life skills model was developed to relate the life skills to the 4-H clover symbol (Hendricks, 1996). The flexible design of the program allows participants to choose which activities and learning experiences to complete. Participants can also choose their own project helper to assist them in setting goals, planning, and completing the activities.

Poultry Science Departments across the USA contributed to the poultry curriculum for the agricultural program (National 4-H Council, n.d.). The curriculum includes selecting and judging poultry, and investigating poultry products. It also includes raising and showing poultry, poultry health, and examining careers in poultry. In Georgia, students compete at the regional and state levels to determine their expertise in evaluating laying hens, identifying poultry meat cuts, and grading eggs and carcasses.

Federal and local resources support the 4-H program in Georgia. Federal, state, and local funds provide financial support and the expertise available to help the 4-H program in Georgia provide a quality program (Georgia 4-H, n.d.). Because most 4-H meetings are held during instructional time, most primary and secondary school students in Georgia may technically be considered members of the program. According to a

census of 4-H programs, as shown in Table 1, there are 1158 students participating in 4-H poultry activities outside of the classroom.

The PSD indicated that the 4-H program is utilized as a feeder program to help recruit students to their department (University of Georgia, 2009). In order to evaluate the program as a recruitment tool, it is important to understand career theory and how individuals make their decision on their life's work. Through this understanding, the program might be better aligned to the principles of career theory to encourage more students to pursue poultry science as a career.

Table 1

Number of Georgia Counties with Settings Offering 4-H Programs With (Including Number of Participants) and Without the Poultry Curriculum

Setting	With	Participants	Without
Urban	5	66	10
Suburban	15	214	5
Rural	55	878	36
Total	75	1158	51

Note: 126 of 158 counties responding

Career Theory

Career theory began at the turn of the last century, and it has steadily evolved as it has tried to keep pace with the increasing number of occupational fields and as new psychological and social data become available. Numerous career theories in the

literature today attempt to describe how people choose their future vocation by helping to identify the factors involved in career development. Interventions based on such theory can be employed to help people in their career decision-making process, and programs can be developed to influence career choice.

Although his manuscript was not published until after his death in 1908, Frank Parsons is regarded as the founder of vocational psychology and guidance (Baker, 2009). Parsons' work, widely hailed at the time of its publication, still has much influence today in the field of guidance counseling. Beginning his work in the late 1800s, Parsons developed a methodology to match individuals to careers in which they could be successful (Parsons, 1909). His *trait and factor* approach recognizes that individuals possess unique personality traits that are important factors when deciding on an occupation. His findings led him to identify three guiding principles for career choice: understanding of oneself that includes strengths and weaknesses; knowledge of career requirements; and objective, rational decision-making based on understanding derived via the first two principles that will help individuals match themselves to a particular field.

Parsons also argued that it was important to guide youth in choosing their occupation (Parsons, 1909). He opened the first career counseling service, the Vocation Bureau of Boston, which was free for those who needed such occupational guidance. He compared building a career to building a house: choosing the right location, laying a proper foundation, and using a well-designed plan for construction. He emphasized the importance of exposing youth to many experiences in an effort to produce well-rounded individuals.

Ginzberg, Ginsburg, Axelrad, and Herma (1951) introduced a developmental theory of career choice that (like other psycho-developmental theories widely popular at the time) indicated that children pass through a series of stages. Young children are in a *fantasy* stage in which they think they can do anything without considering needed skills. Adolescents between 12 and 18 years of age go through the *tentative* stage as they become interested in a career area because it meets a basic need (enjoyment, values, ability to succeed, etc.) and tentatively decide on a career field. Around 18 years of age, individuals reach the *realistic* stage*,* in which they begin to take a closer look at the skills they will need to succeed in a career and start moving in that direction.

Donald Super (1957, 1990) later proposed a longer-term developmental model of career choice based on an individual's development of self-concept. He described five stages that occur over an entire lifetime. The first of these is the *growth* stage from birth to 14 years old, in which people develop interests and attitudes, form concepts, acquire self-concept, and gain an understanding of work. People then enter an *exploratory* stage from 15-24 years of age in which they explore new career ideas through education, jobs, and hobbies. They collect important information, make tentative career decisions, and seek to develop skills. The *establishment* stage, between ages 25 and 44 years, is when individuals gain work experience and become stabilized in a career. During the *maintenance* stage, ages 45-64 years, people continually adjust to better position and advance themselves in their career; and during the *decline* stage, 65 years and over, individuals prepare for retirement.

Another theory that relates to career choice is the Theory of Personality developed

by John Holland (1966). Holland proposed a hexagonal model wherein people fall into one of six distinct personality types (*realistic*, *investigative*, *artistic*, *social*, *enterprising*, and *conventional*). He then described six basic types of work environment that match these personality types. Holland believed that people seek out a career environment in which they feel the most comfortable according to their personality type. He contended that people of the same personality type work together to create an environment in which their personality type can flourish. Holland went further to argue that people who match their work environment type to their personality type are much more successful and have a higher level of job satisfaction.

Social learning theory in career selection (SLTCS) is attributed to Krumboltz, Mitchell, and Jones (1976). They investigated the influences that affect career choices, such as genetic makeup and unique abilities; environmental factors and events; learning experiences; and task-approach skills. *Genetic endowment and unique abilities* include inherited or innate factors such as race, gender, physical appearance, and disabilities. *Environmental factors and events* are generally also out of the individual's control and can involve natural forces and resources, economic situations, and political, social, or cultural factors. *Learning experiences* include both *instrumental* learning experiences—responses to stimuli, behavioral responses, and consequences of individual actions; and *associative* learning experiences that derive from observing the activities of others. These factors in combination are responsible for the development of *task-approach skills* such as work habits, emotional responses, and personal standards of performance.

Social cognitive career theory (SCCT) extends Krumboltz et al.'s (1976) theory that cognitive factors are important in career development and decisions (Lent, Brown, & Hackett, 1994) and is rooted in Bandura's (1986) social cognitive theory. Social cognitive career theory focuses on cognitive factors such as self-efficacy, outcomes, and goals and how they interact with inherited (or otherwise innate) and environmental factors to influence career development. The conceptual framework of SCCT offers an explanation of how

individuals develop interests in a specific career area, make career decisions, and use performance and persistence to achieve career success.

In Brown's (1996) model, values are crucial determinants in career choice. Personal values are acquired through interactions with society and family. Gender, culture, and socioeconomic status, which are responsible for the great variation in values, may limit or enhance social interaction and opportunities. Highly prioritized values, according to Brown, are the most important factor in career choice. For instance, individuals who share strong social values with their families may allow the family to choose a career for them.

The career theories discussed indicate that the 4-H program targets youth in an age bracket that is agreed to be important in developing career interests. The theories further suggest that specific personality traits also influence career choice, and that those traits can help create successful work environments. Finally, the majority of career theories emphasize the importance of varied learning experiences, self-efficacy, and

values in creating interest in career fields. The 4-H program uses participants' interests in

specific areas to help them develop life skills through experiential learning.

Experiential Learning Models

The National 4-H Council (2011) described a five-step experiential learning

model that is used to teach life skills through 4-H activities. The first step is *experience*,

in which the 4-H member is encouraged to learn by performing an activity without being

shown or told how to do it. The second step in the model is *share,* which may or may not

be mediated by an adult but requires the 4-H member to share the results of the activity

with other members. *Process* is the third step in the model, wherein members further

discuss and reflect on the activity they performed and analyze what they learned. The

fourth step is to *generalize* or reflect about the life skills learned during the activity. The

fifth and final step is to *apply* the life skill to a new situation in order to further practice

the new learned skill. The National 4-H Council credits a book written by Pfeiffer and

Jones (1983) as the source of the five-step model (2011).

John Dewey, a founder of experiential learning theory, cited *interaction* and

continuity as the two principles that determine the quality of the educational benefits

from any given experience (1938). *Interaction* refers to the exchange of information

between the individual and the environment; *continuity* is described as the contribution of

those who have already had the experience and how it is changed by those who have the

experience later. Dewey argued that learning takes place from evaluating an experience

to determine what is important to remember about it and then applying it to

experiences. This process is the backbone of experiential learning.

Lewin proposed a four-stage cyclic experiential learning model (as cited in Kolb, 1984). In this model, when a problem is encountered, individuals reflect on what they already know, create a plan of how to proceed, enact the plan, and then observe the results. Through this cycle, an individual's knowledge is modified by the experience, and the cycle continues based on the modified (enhanced) knowledge applied to new problems.

Piaget (1970) theorized a more linear model of experiential learning processes. He suggested that experiences are synthesized by individuals in one of two ways: *assimilation* or *accommodation*. New information is assimilated into our current beliefs and understandings when an experience is successful, and accommodations are made by challenging or changing our current beliefs when failure or unexpected results occur. Piaget believed that this model was the best way to develop deep learning.

Kolb (1984) used a Lewin-like experiential learning model that included *experience*, *perception or reflection*, *cognition*, and *action* to identify four distinct learning styles: *accommodative*, *assimilating*, *convergent*, and *divergent*. These styles describe an individual's preferred way of learning. Kolb contended that knowledge is acquired in a continuous process grounded in experience: one must move through all learning stages in order to maximize the benefits of experience and acquire deep learning.

Because the 4-H program uses an experiential learning model to help youth develop life skills, participants are involved in projects as vehicles to help them develop these skills. By being involved in these projects, students not only develop targeted life skills but also discover their career area of interest. As earlier noted, the poultry

component of the 4-H program does include rearing and showing poultry, poultry health and nutrition, poultry selection and judging, and careers in the poultry industry that help make participants more aware of the opportunities available to them regarding poultry.

The 4-H program has a structural foundation that could result in more students choosing poultry science as a career, yet the number of students enrolling in poultry science as a major in college remains limited. If the PSD wants to continue to rely on the 4-H program as a tool to recruit more students into the department, it is important to know why it is currently unsuccessful. To better understand this lack of success, a *program evaluation* is necessary.

The Need for Program Evaluation

Spaulding (2008) described program evaluation as a process of collecting formative or summative data to be used for decision-making purposes. Qualitative and quantitative data are collected and analyzed to provide feedback about the program. A *summative* evaluation is used to evaluate program outcomes and judge its success overall. *Formative* evaluations are conducted to provide feedback that helps identify and address areas of concern especially where implementation deviated from the planned program. These are the two types of evaluative information used to make informed improvements to a program.

It is obvious that the 4-H program has not been an effective tool for the PSD. To date, the department has not enlisted the resources and expertise to uncover the reasons it has been unsuccessful. By identifying the strengths and weaknesses through a formative

evaluation, the PSD will be able to make informed decision on how to better utilize the 4-H program as a recruitment tool.

In the following section of the review of the literature, enrollment trends in youth development programs, career choice with regard to 4-H, and the influence of 4-H on postsecondary education will be discussed. In addition, a 4-H volunteer profile will be examined as well as online volunteer training and current 4-H resources.

Enrollment Trends in Youth Development Programs

Examining enrollment trends in youth development programs is essential to recruiting and retaining students. Understanding why students choose to participate in a program and what factors influence their willingness to continue should give insight into ways to tailor programs to retain students.

Balsano, Phelps, Theokas, Lerner, and Learner (2009) conducted a longitudinal study in which 946 students were surveyed to determine their participation in out-of-school-time (OST) activities while in fifth and sixth grade. The OST activities were categorized as follows: youth development programs (YDP) including 4-H, Boys and Girls Clubs, Boy Scouts, Girl Scouts, YMCA, YWCA, Big Brothers/Big Sisters; sports both team and individual; arts, including band, chorus, dance, music, visual arts, and crafts; interest clubs such as school government and academic clubs; and service groups including religious groups, peer tutoring, and volunteer work. Results were reported both by gender and in combination.

The study showed that fifth grade students were involved in an average of three OST activities. Results also indicated that student involvement in OST activities drops

significantly between fifth and sixth grade in every category except for boys in sports, which increased slightly. Forty-four percent of the fifth graders surveyed indicated that they were involved in YDPs, while 36% were involved in YDPs during their sixth grade year. These results did not indicate why there was a decrease across most OST categories, but the researchers suggested that the interests of students may have become more focused therefore leading to a decrease in OST activities. There is also an indication that students were more interested in social activities than youth programs. The researchers further suggested that the characteristics or quality of the OST activities might be responsible for the decline in participation. This information may prove useful in understanding at what age students should be introduced to a high-quality 4-H Poultry Program.

In a study of California 4-H enrollment trends over 10 years, data from over 221,000 enrolled youth were analyzed (Russell & Heck, 2008). Researchers found that most new program enrollees were between the ages of nine and eleven. This age group of students also remained enrolled for the longest period of time; nine year-olds for 3.85 years, 10 year-olds for 2.84 years, and 11 year-olds for 2.41 years. After the age of 11, both new enrollments and average enrollment duration steadily declined. Results also showed a 23.3% decline in total enrollment over the 10 years under study. Changes in program activity offerings and program staffing (a reduction in county-based CES staff) also occurred during this period and may have had some effect on enrollment figures.

Gillard and Witt (2008) provided a framework for recruiting and retaining youth in OST activities. They created a list of guidelines to recruit and retain participants:

1. Students should have a voice in the programs that they are involved in and be authentically represented through leadership opportunities that allow them to take ownership of the program.

2. Students should have input into the programming to help meet their needs and aspirations.

3. Students also need to feel safe in a youth-friendly environment, with easy access or transportation to activities.

4. Students should be able to provide meaningful service to their communities.

5. Students should be provided with attendance incentives and with promotion opportunities within the program.

6. Students should have family involved in the program as well as a caring staff who can relate to the participants.

7. OST programs should work collaboratively and form partnerships with other youth programs to help fill any programming gaps.

8. Program evaluations should be conducted to refine the program so that it better serves, recruits, and retains students.

It would be valuable for researchers to discover which of the listed guidelines are considered by the 4-H leaders in Georgia when they develop their program and select sites to stage their 4-H project activities.

A Pennsylvania study, using a descriptive and correlation design, collected quantitative data from 87 4-H participants to understand the factors involved in their recruitment and retention in the program (Gill, Ewing, & Bruce, 2010). A second

objective was to learn what factors influenced members' participation in 4-H projects, activities, and events. Findings concluded that parents had a major influence on a member's decision to join, as did a member's own desire to broaden and improve life skills. Members also indicated that they were given the opportunity to help in their program and challenge themselves. Time limitations and cost considerations were found to influence the choice of activities. The lack of awareness of specific 4-H activities also limits member involvement in the 4-H program.

The studies addressed in this section show the importance of high-quality youth programs. Many activities and programs are competing to recruit and retain students. Programs must be attractive to youth and be well staffed to ensure quality. Involving parents in recruitment efforts and appealing to students' own desire to improve life skills are also important to participation of young 4-H members.

Career Choice and 4-H

There is evidence that the 4-H program has prompted many career choices. This section includes studies of former 4-H students and the influence of the program on their choice of careers. In addition, the influence of agricultural experiences on the perceptions of agricultural careers is examined.

In a qualitative study on the effect of 4-H on career development, 318 former 4-H members from Nebraska responded to a Likert-scale formatted survey (Rockwell, Stohler, & Rudman, 1984). Fifty-two percent of the participants indicated that 4-H activities influenced their potential career choice. It was noted that the longer a participant was involved in 4-H, the more likely they were to indicate that 4-H was

influential in their choice both of institutions for further education and of the area of study. Since a qualitative approach was taken in this study, no understanding of how 4-H participation influenced career development was provided other the number of respondents who indicated that 4-H was influential in developing specific life skills.

A study designed to examine student perceptions of agriculture found that students with some previous agricultural education were (as might be expected) more familiar with agriculture, and that they also perceived agriculture-related careers more positively (Troutman, 2008). The study showed that students enrolled in college agricultural programs were influenced the most by the perceived quality of the department in which they were enrolled, followed by their parents' wishes and opinions, and then by their prior agricultural experiences. Nearly half of the students enrolled in the COA had some form of agricultural education, 81% were white, and less than 10% were from urban areas. The researcher recommended that 4-H and other agriculture-related organizations seek out and recruit students from nonagricultural populations, especially urban and minority areas. Another recommendation was to include parents in recruitment efforts by the college.

The two previous studies show that 4-H can influence a student's decision to select a career in agriculture. Again, parents play an important role in that decision. The studies indicate that the 4-H program and the COA should make it a priority to recruit students from nonagricultural backgrounds, including urban minorities and others from urban areas that have less exposure to farming and are less likely to be familiar with career choices in agriculture.

Boardman (2008) conducted a study using a correlation research design to determine if participants believed that they developed employability skills by participating in Career Development Events (CDEs). The study involved 355 high school students involved in three FFA CDEs at the state level including agricultural sales, horse evaluation, and forestry. The results showed not only that students believed they increased their technical knowledge, but that they also developed skills desirable in the workplace. Overall, students involved in the agricultural sales CDE believed that they developed the most employability skills; interestingly, more females than males believed that they developed those skills.

The 4-H program uses the students' interest in poultry as a vehicle to develop life skills. In turn, the learning experiences and self-efficacy developed through participation in a 4-H Poultry Project could play a major role in career selection. It would be valuable to 4-H and the PSD know if students believe that they develop skills needed to pursue a career in the poultry industry.

Postsecondary Education and 4-H

Studies in this section demonstrate that students participating in 4-H are likely to continue their education after high school. Researchers have shown that 70-80% of 4-H participants have the desire to attend college; while others plan to attend a vocational school.

In a qualitative study that investigated the impact of Maine's 4-H program, interviews were conducted with sixty 4-H alumni who had graduated over the past five years (Fitzpatrick, Gagne, Jones, Lobley, & Phelps, 2006). Eighty percent of the alumni

who participated in the study were in 4-H for seven years or more, and 62% were involved in time-intensive animal projects. The majority of the respondents indicated that they learned to accept people who are different, to make healthy choices, to value community service, and to acquire job skills while participating in the 4-H program. Several common themes emerged when respondents were asked about which life skills they had gained from their participation in 4-H. Among these was responsibility, teamwork, self-esteem, cooperation, planning and organizing.

When asked how they ranked themselves in their academic performance in high school, 42% described themselves as average, and 56% described themselves as above average or much above average (Fitzpatrick, et. al, 2006). Eighty percent were in college or had plans to go to college, and 25% planned to go on to graduate or professional school. Interestingly, the Maine state average for students attending college after high school was cited as 67%.

Talbert and Balschweid (2006) used a survey to compare responses from their study with responses from a similar study conducted three years earlier. The sample consisted of 1,070 FFA high school students from across the United States. Results showed that 55% of the respondents were or had been 4-H members, which was higher than the 49% reported in the previous study. The study found that 77% of respondents planned to attend a two- or four-year college, up from the previous 75%. Additionally, 10% planned on attending a vocational school. Thirty-four percent of respondents indicated a desire to pursue a career in agriculture and natural resources.

In another study, conducted to determine aspirations for postsecondary education, 265 participants from a 4-H teen summer conference in Montana were surveyed (Flynn, Igo, & Astroth, 2008). Results indicated that 70% planned to attend a four-year college and that 95% planned to further their education after high school. A second goal of the study was to determine the factors that influence or predict future aspirations of the participants; researchers found no correlations of statistical significance. The authors recommended further research addressing such factors.

The studies in this section show that the majority of 4-H members aspire to pursue or actually pursue postsecondary education. Moreover, many members indicated that they would further their education in the fields of agriculture or natural resources.

4-H Volunteer Profile

Volunteers are an important element of the 4-H program because of the limited number of 4-H professionals available to work with students in the numerous subject areas the program covers. To maintain and increase the program's availability volunteers are essential.

Lobley (2008) conducted a mixed-methods survey study to identify the characteristics of Maine's 4-H volunteers, to understand how they became involved, and to discover the reasons why they continue to volunteer. The study found that the majority of volunteers were married women aged 36 to 45 with two to three children and a postsecondary education. Most had lived in the state for over ten years and spent up to ten hours a week in their volunteer role. Slightly more than half had an above-average household income, and 40% held had additional leadership roles in the community.

Forty-four percent of the Maine volunteers were former 4-H members; 48% took the initiative to become involved, while nearly 21% were asked to join. Sixty-two percent said they became involved because of their children, and 23% because of past experiences. The reasons they stayed involved varied; 22% said they stayed so that their children or grandchildren could benefit, 15% because of the values of 4-H, 10% because they believed in the 4-H philosophy, 10% because of their love of children and the enjoyment they derived from an individual child's growth, and 5% because they found 4-H to be family-oriented, rewarding, and fun.

Radhakrishna and Ewing (2011) conducted a study using a descriptive-correlational design to investigate volunteers' perception of 4-H life skills, their competencies to promote them, and the contribution of their competencies. Another objective was to collect demographic information to create a volunteer profile. The study included 148 volunteers involved in the Pennsylvania 4-H program. Of the participants, 77% were women and 74% were over 40 years of age. Sixty-one percent had some college education, 9% with graduate degrees, and 57% were former 4-H members. Most volunteers lived in rural areas (84%) and approximately 67% had at least 10 years of volunteer experience.

It is obviously important to understand the types of people who volunteer their time to the 4-H program and the reasons they do so. Using this knowledge, 4-H professionals may be able to find more volunteers, which as noted is essential for more efficiently implementing the wide range of activities provided by 4-H.

Online Training for 4-H Volunteers

Having an adequate number of volunteers is vital to the 4-H program, but having them properly trained is equally vital. Although the expertise is available to provide training, scheduling the training for volunteers can be challenging. The following study investigated the option of online training.

Kaslon, Lodl, and Greve (2005) used an action research model to determine whether online training is a viable option for 4-H volunteers. In the first round of data collection, volunteers were asked whether they believed it was acceptable to use an online training program to educate 4-H volunteers. The study concluded that volunteers believed that online training was an acceptable and viable way for leaders to gain information, although they favored face-to-face over online training. Because of the convenience factor, an online training program was developed for 4-H volunteers.

The volunteers were asked to access and navigate the online program, and a second round of data was collected through focus groups. Results showed that 4-H volunteers were excited about some of the online training features and believed that the program would add consistency to 4-H training across the state. Volunteers also felt that the online program provides an option when no other training is available. The online training program was modified in accordance with 4-H volunteers' responses to their experiences.

After the site had been modified, volunteers were asked to spend more time using it. A third round of data was collected that included an evaluation of the online training program. The data showed that the strengths of the program included the following:

training time was shortened; information was conveniently available at any time; and the program increased networking and discussions among 4-H volunteers statewide. Weaknesses identified were insufficient technology accessibility, delay in answers to questions, and lack of personal interaction afforded by face-to-face training sessions.

Online training, therefore, is a viable option for delivering instruction to 4-H volunteers. However, it is important to consider feedback from volunteers to ensure that they are properly trained and that the program is user-friendly. Keeping an up-to-date database of 4-H activity information (such as curricula) and providing timely answers to questions are most beneficial to volunteers.

4-H Resources

The National 4-H Council provides written curricula in activity books and helper guides in 180 topic areas. The input from volunteers, as well as from experts in the field, is important in developing these curricula, since in many if not most cases volunteers are the ones delivering the curricular content and observing student response.

In an effort to inform the development of improved curriculum resources for 4-H animal and veterinary science projects, 432 California volunteers were interviewed and surveyed in a study using a sequential exploratory mixed-methods design (Smith, Meehan, & Dasher, 2009). Many volunteers indicated that they only occasionally, rarely, or never used the 4-H published curriculum or resources to lead veterinary or animal projects. Eighty-six percent indicated a need for additional resources and curriculum. They suggested more material regarding swine, rabbits, sheep, horses, and poultry species specifically in the areas of nutrition, preventative health care, zoonotic diseases,

animal handling, and animal behavior. In addition, 44% of the volunteers indicated a need for an animal-care curriculum that could be completed prior to a youth member obtaining an animal.

The studies in this section were conducted in numerous areas of the United States and included a variety of 4-H activities. Of primary importance for the purposes of the present study, there is evidence that 4-H does have an influence on career choice. The cited studies also indicated that many 4-H members seek postsecondary education. Additional studies provided a profile of 4-H volunteers and showed that online programs provide a viable option in training volunteers. Finally, published curriculum guides and resources were said to be inadequate by many volunteers. The results of these studies raise questions about the implementation of the 4-H program in Georgia.

Saturation of the literature has been reached and few studies have been conducted in this area. The following key words were included to search the literature: *college recruitment, 4-H, FFA, agricultural education, College of Agriculture, land-grant university, career theory, career choice, career development, poultry science, experiential learning, enrollment decline, poultry, employment in agriculture, and youth development program*. The studies included in the literature were selected based on their significance to the problem.

Implications

Because 4-H has the potential to reach nearly every student in Georgia, the findings of this study could lead to improvements in the implementation of the poultry

component of the 4-H program. These improvements could positively impact the number of students entering the PSD and who subsequently, seek employment in the poultry industry workforce. By doing so, Georgia will have a workforce to maintain a strong presence in poultry agriculture. The benefits could be wide spread with continued delivery of safe and affordable poultry products to consumers worldwide.

The findings may suggest the need to retrain 4-H leaders and volunteers on the implementation of the 4-H poultry curriculum emphasizing poultry jobs and careers. More frequent formative evaluations performed intermittently will help ensure compliance of the implementation with the program design and ultimately ensure eventual effectiveness of the program. Since many COAs are reporting a decline in enrollment, it may be beneficial to examine other state's 4-H programs as well. The USDA and 4-H professionals may also want to re-evaluate their own guidelines on program evaluation to help make their programs more effective.

Summary

As discussed in this section, the poultry component of the 4-H program has evidently been ineffective in helping recruit students pursuing a degree in poultry science at a local land-grant university. The poultry industry depends on the PSD to educate an adequate number of students to meet its employment needs. Because land-grant universities have a significant influence on the state's 4-H program, it is important to examine the implementation of the poultry component of the 4-H program. A formative evaluation is appropriate and needed to help identify the problem areas in the

implementation of the 4-H poultry curricula. In the next section, the program evaluation

methodology is discussed.

Section 2: The Methodology

Introduction

In this section, methods used to address the research questions are described. The research design is specified and justified, followed by a description of the target population. The sampling technique used to select participants was presented and justified. Additionally, data collection methods are discussed, including the types of data collected, data collection instruments, and appropriate data analysis methods.

Research Design

The research design selected for this study is mixed methods formative program evaluation using both qualitative and quantitative data. A concurrent triangulation strategy was used, collecting both types of data at the same time and comparing the results to strengthen the findings of the study (Creswell, 2008). The PSD wishes to improve the effectiveness of the 4-H program in recruiting students into the department. Although the purpose of the 4-H program is to help youth develop life skills, it has a strong connection to the PSD. Using an experiential learning model, the 4-H program draws upon member interest in specific areas (including poultry) to teach life skills through involvement, projects, and activities (National 4-H, 2011).

Program evaluation is described by Spaulding (2008) as a process that combines formative and summative evaluation to provide feedback for a program in an effort to make the program more effective. Formative evaluation, which corresponds to implementation and process evaluation, is used to improve programs under development to help determine a direction beneficial to ensure their outcomes (National Science

Foundation, 2002). However, formative evaluation can also be used to guide a program already implemented in an effort to make improvements (Stufflebeam, et al., 2003).

Stufflebeam (1966) introduced an evaluation model that stressed the need for program evaluation. Stufflebeam (1967) identified the four core concepts of the evaluation model, denoted in the acronym CIPP: *context*, *input*, *process*, and *product*. A context evaluation is used, through needs assessment, to help set program goals and objectives to meet the needs of stakeholders by assessing the problems, assets and needs of a program. An input evaluation assesses the effectiveness of program activities, procedures, strategies, and resources in supporting goals and objectives. The process evaluation is used to assess the delivery of the program's components, and the product evaluation investigates whether the program has been successful in meeting its goals.

Stufflebeam, Foley, Guba, Hammond, Merriam, and Provus (1971) added another dimension to the CIPP model by setting the four types of evaluation within a systems framework. Stufflebeam (1972) later showed how the CIPP evaluation model could be used in both summative and formative evaluation. For the most part, input and process evaluation in the CIPP model corresponds to formative evaluation; however, product evaluation may also be used to provide feedback that may lead to improvements in the program. Stufflebeam (2002) then developed a checklist to be used by evaluators and stakeholders or clients in defining their roles throughout the evaluation process, from contractual agreements to synthesis of the final report. The CIPP model can be used by both internal and external evaluators (Stufflebeam, McKee, & McKee, 2003).

The poultry component of the 4-H program has already been implemented. Although the overt intended purpose of the program is not to recruit students into the PSD, it was expected to generate interest in careers in poultry agriculture both among participants and among adults in the community. It is interesting to note that this has not been the experience in Georgia and at the university, specifically in the PSD. The PSD is directly involved in the operations of the 4-H program and would like to use the program as a recruitment resource. A formative evaluation of the input and implementation process of the program was conducted with particular attention to how faithfully the national 4-H curriculum was being used in Georgia.

Role of the Researcher

As the researcher, I am an alumna of the PSD. I majored in both Avian Biology and Poultry Science. I am a former research professional in the PSD but was not employed by the department during the time of the study. At the time of the study, I had no relationship with the university students who were included in the study.

Additionally, I had interacted with 4-H leaders in the past as a university employee at various regional and state level poultry evaluation contests. Other 4-H experience included working on 4-H projects with my own children. At the time of the study, I had no relationship with any 4-H leaders in Georgia other than the state director who was my contact and link to the program.

Participants

The populations under study were the 4-H leaders in Georgia counties that implement the poultry component of the 4-H program and university students who

had declared Poultry Science as their major. A *population* is here defined as a group of individuals who share pertinent characteristics (Creswell, 2008); a *target population* is one that the researcher can identify and study. Participants in this proposed program evaluation included 4-H adult leaders from counties that were currently involved in the 4-H poultry program and current university students who were from Georgia and had declared Poultry Science as their major in a COA in Georgia.

Of the 158 Georgia counties with Cooperative Extension offices, 126 responded to a county census (Table 1). Seventy-five counties (59.5%) indicated that they offer poultry activities to their youth members. Because of the limited size of the target population of 4-H groups that offer poultry science curriculum and the chance that there would be less than 100% response rate to the 4-H leader survey, the data was collected from all Georgia counties that offer poultry science curriculum . These circumstances allow for the best possible confidence level and zero sampling error.

A purposive sampling technique was used in the qualitative part of my study to select a sample from the population of students at the university. Proportional quota sampling is a subcategory of purposive sampling that requires the sample to be proportional to the population based on specific characteristics (Trochim, 2006). For the purpose of this study, I chose to use class standing of university students who have declared poultry science to be their major as the characteristics on which to base the proportional quota sampling.

Students who have chosen Poultry Science as their college major were invited to participate through private email via the departmental list serve. Currently enrolled

students (Spring 2013 semester) who had declared Poultry Science as their major include

six sophomores, eight juniors and 12 seniors (M. Myers, personal communication, April

5, 2013). A sample from the willing participants was to be selected to ensure

representation from all class standings (i.e. sophomore, junior and senior at the time of

data collection). Because of the difficulty of gaining student cooperation to participate, all

13 sets of data collected were used. According to Mason (2010), although sample size

can be affected by many circumstances, the goal is to have a large enough sample to

reach saturation. Saturation is reached when most or all perspectives or pertinent

information is garnered. After that point the data simply becomes repetitive and no new

information is gained.

Data Collection Methods

For this study, I collected the quantitative data from the population of adult 4-H

leaders via electronic survey. A letter was sent, using the 4-H list serve, explaining the

study and the study's risks and benefits. It contained a link to the survey and also

explained to the participant that by completing the survey their consent was implied.

Survey technique facilitates data to be collected through questionnaires from a large

sample of the population under study that allows the population to be generalized about

(Creswell, 2008). Administering the survey in an electronic format allows for rapid

distribution, ease of reminders (there were three), convenience, and anonymity for the

respondent as far as completing and returning the survey (Archer, 2003).

A letter of cooperation was obtained from the PSD (Appendix G) stating that

the department would provide contact information of current students giving the researcher access to potential participants. I approached potential survey participants and interviewed participants through a confidential email and asked them to participate. The qualitative data was collected through telephone interviews. Collecting data through interviews allows participants to give the historical information (Creswell, 2008) needed to understand why Poultry Science was their chosen major. Open-ended response questions were developed to investigate how they made their decision to major in Poultry Science (Appendix C) and were used to corroborate or negate responses given by the leaders about the 4-H program. I decided to contact students by attending a Poultry Science Club meeting and emailing via the Poultry Science department list serve. A list of willing participants was compiled. There were only 13 willing participants and because of the limited number, all were interviewed to collect data.

Telephone interview was chosen to better access participants in a reasonable amount of time. Telephone interviews allow for synchronous communication and data collection from wide geographical areas and hard-to-reach populations (Opdenakker, 2006). Telephone interviews also allow the researcher to probe for additional information during the interview. A disadvantage of telephone interviews is that social cues cannot be identified during the phone call.

Because of the difficulty in scheduling telephone interviews, I decided to attend a Poultry Science Club meeting and conduct face-to-face interviews with students. The students and I went through the process of informed consent prior to the interview (Appendix A). The interviews were conducted using an interview guide to ensure

coverage and similarity of questions (Appendix C). I took notes and recorded the interview session on a tape recorder.

Data Collection Instruments

A quantitative survey instrument was developed to elicit responses from leaders about the implementation of the poultry component of the 4-H program and was administered electronically. Electronic surveys have many benefits including convenience for both the researcher and participants, speed of delivery and data collection, ease of reaching participants from a distance, and question diversity (Evans & Mathur, 2005). Low response rates are one of the weaknesses of online surveys but after three reminders a total of seventy-eight surveys were completed. The survey software that I used was a program called Survey Monkey.

The instrument (identify the instrument you are addressing here) is modified from a current 4-H resource, which is used by leaders to help determine the impact of their program. According to Creswell (2008), the easiest approach to obtaining a data-collection instrument for a study is to locate an already existing instrument, either to use as-is or else to adapt to the study's needs. Hence, there was a need for me to modify an existing Likert-type instrument designed for use by 4-H leaders (Appendix F). Permission was granted by the National 4-H Council to modify and use the instrument (Appendix E). The questions used (Appendix C) include items about leader qualifications and training opportunities, the use and usefulness of current 4-H materials, when and where meetings were held, how parents and community members were involved in the program, and any challenges involved in implementing the poultry component of the 4-H program. The

questionnaire also inquires about the potential skills and career awareness that youth gain from participating in 4-H poultry activities. The questionnaire was reviewed by the PSD chair for content, validity and clarity.

The questionnaire was also administered to ten 4-H leaders who were not used in the study for piloting purposes to calculate Cronbach's alpha .917. The time taken to complete the questionnaire was noted. Respondents were debriefed to determine if the directions were adequate, the questions were clear, and the response choices were appropriate. I revised my questionnaire when it was necessary.

During the piloting of the instrument, a discrepancy was discovered. Although six of the ten participants reported that 4-H meetings were held during school hours, only one stated that the meetings were held at the school. A follow up was conducted to find out why the participants answered in that particular way. It was determined that there was a problem with the wording of the question and revisions were made to clarify prior to data collection.

For the qualitative data collection, I developed an interview protocol that ensured that the same questions were asked of each participant in a semi-structured interview (Appendix D). Prior to scheduling the interviews, the questions were reviewed by a person knowledgeable in qualitative research. During the interviews, I read the questions to each participant and added follow up questions when appropriate. The interviews were recorded with permission of the participants for later transcription. Notes were also taken during the interview.

Data Analysis Methods

Data, collected from the 4-H adult leader survey instrument, was scored using a predetermined numeric score to each response category. The data was formatted as a Statistical Package for the Social Sciences (SPSS) computer file, then cleaned and assessed by the SPSS software for missing data. Written responses from "other" response selections were categorized to best fit the existing categories. Missing data was dealt with by item, rather than by case. Descriptive statistics in SPSS was used to analyze the categorical data. For most questions, appropriate measures of central tendency; *mean*, *median*, and/or *mode,* were used as a single value summary, while appropriate measures of variability, variance, standard deviation, and/or range, were used to show the corresponding spread of scores.

Qualitative interview data was transcribed from my interview recordings and notes within a day of each interview. The data was collected then coded, sorted, and categorized in an effort to answer the research questions. Once categorized, the data was further analyzed to identify emerging themes. Follow up interviews were conducted for accuracy through member checking. The qualitative data from the student interviews were triangulated with data collected from adult 4-H leaders in an effort to see if they corroborated or contradicted what leaders said about the organization, practices and resources in 4-H programs.

Assumptions, Limitations, and Delimitations

Assumptions

The mixed methods formative program evaluation research design chosen for this study assumes that Georgia counties can accurately be characterized as urban, suburban, or rural. It also assumes that there were enough voluntary participants to provide adequate sample of data. Furthermore, it is assumed that participants of this study are honest in their answers and that all leaders have and use email.

Limitations

Although collecting data through observation might be more ideal, the quantitative portion of the research design was chosen because of the large volume of data needed to adequately evaluate the statewide 4-H program. Another limitation of the study was that current university students were used because locating former 4-H members would be difficult and time-consuming and, therefore, were not surveyed to determine their choice of college majors or careers at the time data were collected and why they chose them. Alternatively, it would have been ideal to follow some 4-H participants into college to examine their choices. However, that was not feasible for this study. I am hoping to find that some of the students interviewed would have passed through one of Georgia's numerous 4-H programs.

Delimitations

This formative program evaluation is limited to the poultry component of the 4-H program in Georgia. The results are not generalizable to any other program or any other state. The data was collected from 4-H group leaders who were active at the time of the

study. In addition, data collected was limited to the 4-H programs that implement the poultry component. Specifically, data were elicited from the 4-H program leaders and their training, 4-H members and the skills, attitudes, and knowledge gained through their participation in the program, and how other adults in the community were involved in the program.

Protection of Participants

The participants in this study were protected from harm in numerous ways. Walden University's Institutional Review Board approval was obtained before any data was collected from interviews and surveys. In addition, informed consent was obtained from interview participants; none were under 18 years of age and thus, none required parental consent. Informed consent was based on information regarding any risks involved in the study, the purpose of the study and how it was to be conducted, potential benefits of the study, and it was explained that participation was strictly voluntary. In addition, the participants' rights were disclosed including the right to decline participation, withdraw from the study at any time, ask questions, remain anonymous, and that they would have access to results of the study. Furthermore, informed consent also included information about my goal as a researcher. Participants were required to provide their signatures following the reading of their rights.

Data collected was kept confidential to protect the identity of participants. The data was stored on a password protected, removable computer flash drive that was accessible only to me. Audiotapes and data were stored in a locked file cabinet in my

home office. This information will be stored for a period of five years then destroyed in an appropriate manner.

Research Findings

Data was collected from thirteen college students majoring in poultry science during face-to-face interviews. All of the students were from Georgia. All of the interviews were audio recorded and notes were taken by the researcher. The notes were immediately transcribed following the interviews and as I began coding the data several themes emerged.

I interviewed thirteen college students. Six were seniors, six were juniors and one was a sophomore. Only one student had declared a minor of Agricultural Leadership. Of the thirteen students, ten indicated that they were from rural communities while two were from suburban and one was from urban communities.

I first addressed their prior engagements in the 4-H program. Among the students interviewed, 54% said they participated in the program or activities related to 4-H. In addition to 4-H, 54% claimed that they were FFA members in high school. Many students had prior poultry experience. Some activities included participation in poultry judging activities (46%) while in 4-H or FFA, and exposure to poultry at an early age (31%) . There were only 15% of the students indicating that they had no prior experience with poultry before entering college.

After recording my findings about prior experience, I need to find out the motives of the students and what factors led to their relationships in the poultry field. Seven students indicated that developing a positive relationship with Poultry Science

department faculty had influenced their decision to major in poultry science. Four

students stated that the availability of job opportunities was an important factor in this

decision. Three stated that previous high school and college experiences influenced their

decision and two students said they chose to major in poultry science while in middle

school. Some of the students chose the major after they began their college career, 38%

decided that they wanted to work with poultry in their sophomore year, of college and

15% decided during their junior year. Some students indicated that they had switched

from their original major to poultry science because they felt Poultry Science was a better

fit for them and their future goals.

Even though some students indicated interest in the study of Poultry Science, I

was not sure why so many students tended to leave the field after college. I survey the

students to determine their next steps in their career. Ten students responded that they

would seek employment in the poultry industry. The others students listed a variety of

career choices. Of the other 23%, one will seek employment in a nonprofit agricultural

related field, one aspires to go to vet school, and one wishes to go to graduate school and

become a researcher and teacher in a university setting. When asked where they see

themselves ten years after graduation, 46% indicated that they would be in management

or at least advancing in their poultry industry careers, two (15%) would be happy in their

job, two (15%) would own their own poultry farms, and one simply stated that he would

be in an agriculture related job. Of the two planning on professional/graduate school, one

expects to be a wildlife veterinarian and the other a college professor and researcher of

poultry science. Through these findings I realized that not all poultry science graduates choose to work in the industry.

For the data collection from 4-H leaders, I used was an electronic survey. The data was collected from seventy-nine 4-H adult leaders through electronic survey. The survey link and informed consent disclosure were sent via email from the 4-H State Director for approval and disbursement. I sent two reminders to ensure that 4-H leaders were responding in a timely manner. Data was analyzed through electronic survey software called Survey Monkey.

Demographic information was collected from the 4-H leaders. Most of those leading the poultry program (57%) were 4-H Cooperative Extension Service (CES) agents and 43% were other CES personnel (Table 2).

Table 2

Position Held by Georgia 4-H Leaders Implementing in the Poultry Curriculum

Position	Number	Percentage
4-H CES Agent	45	57
Other CES or 4-H Personnel	34	43
4-H Volunteer	0	0

I asked about the average amount of youth participants in each poultry program and found that 42% had 1-10 members, 40% had 11-20 members, 10% had 21-30

members, and 8% indicated that they had over 30 youth participating in their poultry

program (Table 3).

Table 3

Number of Youth Participating in the 4-H Poultry Programs

Number of Youth	Number of Programs	Percentage
0-10	33	42
11-20	32	40
21-30	8	10
Over 30	6	8

Because gender, age and educational background also play a role in the retention

of poultry workers, I was interested in the gender, age and education levels of all of the

leaders of the 4-H programs. Sixty-eight percent of the poultry program leaders were

women (Table 4). Three percent were under the age of 25, 24% are 25-34, 27% are 35-

45, and 46% are over 45 years old. When asked about their level of education, 5% of the

poultry program leaders said they were high school graduates, 13% had some college,

38% had college degrees, and 44% had graduate degrees.

My exact findings are listed in Table 4 below.

Table 4

Georgia 4-H Leaders' Gender, Age, and Education

Gender		Number	Percent
	Male	25	32
	Female	54	68
Age			
	Under 25	2	3
	26-35	19	24
	36-45	22	27
	Over 46	36	46
Education			
	High school graduate	4	5
	Some college	10	13
	Bachelor's degree	30	38
	Graduate degree	35	44

Another important factor in 4-H program retention and future poultry science majors is related to poultry curriculum training for the leaders of the programs. Of the participants surveyed, 22% indicated that face-to-face training was available with poultry professionals from the university, 34% said that face-to-face training was available with experienced 4-H personnel (Table 5). Seventy-nine percent of the poultry program leaders stated that online manuals or videos were available for training purposes, 89%

indicated that printed resources were available, and 5% said there was no poultry curriculum training available.

Table 5

Georgia 4-H Leaders Reported Training Opportunities and Formats

Training Format	Number	Percentage
Face-to-face with poultry professionals	17	22
Face-to-face with experienced 4-H personnel	27	34
Online manuals and videos	63	79
Printed resources	70	89
None	4	5

Many of the leaders indicated that training and availability of training played a role in their ability to relay the studies of poultry science. Thirty-six percent of the leaders stated that training was available at their location while 64% said it was not (Table 5). For those who did not have training available on site, 9% indicated that training was available within 25 miles, 31% were 25-50 miles from training, and 60% had to drive over 50 miles to participate in training opportunities. Sixty-three percent indicated that training was available at convenient times, while 37% said it was not. Fifty-two percent had found the training adequate and 48% did not. Almost half of the leaders indicated the need for a better training program for poultry science, which supports my claim and my plan of study for the future.

Table 6

4-H Leaders Training Availability and Adequacy

		Number	Percent
Training adequate			
	Yes	41	52
	No	38	48
Available Onsite			
	Yes	28	36
	No	51	64
Driving distance			
	<25 miles	5	9
	25-50 miles	16	31
	>50 miles	31	60
Convenient time			
	Yes	50	63
	No	29	37

A textbook or manual can drastically impact the knowledge of a program's interest and success. When asked about resources published by the National 4-H Council, 19% of the poultry program leaders indicated that they used the "Skills for Life" series (published poultry curriculum) and 81% did not (Table 7). Thirty-eight percent said they used the "Poultry Evaluation Guide" (training manual for poultry judging competitions),

while 62% did not. Fifty-five percent indicated that the printed poultry resources published by the National 4-H Council was adequate for use in their program but 45% said they were not. With better resources, many of the leaders may have been more successful in training youth on poultry studies.

Table 7

4-H leaders usage and perception of adequacy of National 4-H Council printed material

"Skills for Life" series		Number	Percentage
	Yes	15	19
	No	64	81
"Poultry Evaluation Guide"			
	Yes	29	38
	No	50	62
Adequate printed material			
	Yes	43	55
	No	36	45

Of all of the factors, parents play a huge role in the decisions that young adults make for their future. Adult poultry program leaders indicated that parental involvement in the poultry 4-H program included 26% using parents to help with meetings or activities, 1% as guest speakers, 49% for chaperones for activities and 43% said parents were not involved in the poultry program (Table 8). Community members are used to assist meetings and activities (23%), 16% as guest speakers, 19% as chaperones for

poultry activities, and 61% do not include community members. The table below shows exact findings from the survey.

Table 8

Parental and Community Involvement in Georgia 4-H Poultry Program

	Parents	Percentage	Community Members	Percentage
Help with activities	20	25	18	23
Guest speakers	1	<1	13	16
Chaperones	39	49	15	19
None	34	49	48	61

In relation to parent involvement, location of meetings can also impact the total amount of participants in a 4-H program. Six percent of the poultry program leaders held their meetings at a local school, 88% at another public facility (most citing the 4-H office), and 6% on private property. Six percent held their meetings during school hours, 94% after school hours and none on weekends (Table 9). Meetings were held weekly for most poultry programs (80%) although many stated that it was seasonal and not year round. Twenty percent hold meetings monthly.

Table 9

Georgia 4-H Meeting Locations, Time, and Frequency

Location		Number	Percentage
	Local school	5	6
	Other public location	70	89
	Private property	4	5
Time			
	During school hours	5	6
	After school hours	74	94

There are many other factors that lead to success in the poultry program. Skills that are taught and retained can increase or decrease interest of any program, especially those relating to science. The 4-H poultry program leaders were asked to rate the perceived level of ability of youth members after participating in the 4-H poultry curriculum. According to the leaders, youth members had the highest level of skill in areas needed to be successful at poultry judging competitions. These skill areas include the following: evaluating poultry, identifying body parts, grading carcasses, using an egg candler, and grading eggs. All skill areas listed are included in the 4-H poultry curriculum and published in the "Skills for Life" series, which indicated that most 4-H poultry programs focus on preparation for poultry judging contests. The data in Table 10 suggests that the other poultry skills in the curriculum were not widely taught or utilize

Table 10

4-H Youth Skills levels after Participating in Poultry Program as Perceived by the Leadership

	Percent of Leaders		
Skill	Extensive	Some	None
Feeding and caring for poultry	7.69	51.28	41.03
Keeping poultry healthy	10.39	42.86	46.75
Evaluating poultry*	50.63	36.71	12.66
Showing poultry	2.56	26.92	70.51
Being knowledgeable consumers*	37.18	47.44	15.38
Keeping poultry records	0.00	29.49	70.51
Identifying poultry management problems	0.00	29.49	70.51
Explaining feed ingredients used in poultry ration	1.28	23.08	75.64
Performing poultry security check	1.28	15.38	83.33
Identifying poultry breeds	5.13	39.74	55.13
Identifying poultry body parts*	61.54	30.77	7.69
Developing a poultry budget	2.56	12.82	84.62
Understanding poultry flock pecking order	3.90	16.88	79.22
Grading poultry carcasses *	62.82	33.33	6.41
Judging poultry*	67.95	28.21	3.85
Using an egg candler*	62.82	33.33	3.85
Using the *APA Standard of Perfection*	14.10	21.79	64.10
Recognizing signs of healthy poultry	16.88	46.75	36.36
Researching common diseases	3.85	21.79	74.36
Describing poultry careers	3.90	42.86	53.25
Handling eggs safely*	48.05	38.96	12.99
Grading eggs*	66.23	29.87	3.90
Incubating eggs	5.13	21.79	73.06
Processing chickens	5.13	21.79	73.06
Managing a small flock of poultry	3.85	30.77	65.38
Describing various biotechnology used in poultry	0.00	16.67	83.33

Note. Values given in percentages. N=79.

 * indicates skills needed for poultry judging

Evidence of Quality

This program evaluation has evidence of quality. During my research, I used the poultry "Skills of Life" series evaluation to collect quantitative data from 4-H leaders. The evaluation instrument was written by the National 4-H Council to help leaders evaluate their own program. Qualitative data was collected from students who were enrolled at the university and had declared poultry science as their major. Member checking was used to ensure that I correctly interpreted the data collected from the university students. The qualitative and quantitative data were triangulated during data analysis.

Discussion

The outcomes associated with this formative evaluation are straightforward. The data were collected and analyzed to find out why 4-H is not pointing students to careers in poultry science. I used the qualitative data provided by university students majoring in poultry science to guide my program evaluation of the implementation of the State's 4-H poultry program.

It is apparent that the 4-H poultry programs are not emphasizing the exploration of poultry careers with youth participants. Less than 4% of the 4-H leader survey respondents indicated that their youth participants had extensive knowledge of careers in poultry. Another 43% responded that their participants had some knowledge of poultry careers, while fifty-three percent of the respondents said that youth participants had no knowledge of careers in poultry after participating in their programs.

The data suggests that many 4-H poultry programs focus on poultry judging

and related activities. Many leaders acknowledged that their youth participants had extensive or some skills in evaluating poultry, being a knowledgeable consumer, identifying body parts, grading carcasses, judging poultry, using an egg candler, safe handling of eggs, and egg grading. All of these skills are consistent with poultry judging competitions.

The data showed that 4-H leaders were not using the National 4-H Council's printed material to implement their poultry programs. Thirty-eight percent of the leaders said they used the "Poultry Evaluation Guide" which is used to train youth participants for poultry judging competitions. Only 19% of the 4-H leaders indicated that they used the National 4-H poultry curriculum "Skills for Life" series in their programs. In addition, 45% indicated that they believed the 4-H resources available were not adequate for use in their programs. Some leaders were unaware of the resources available to them. One leader did not have any prior knowledge of the "Skills for Life" series.

Many 4-H leaders were found to lack proper training. Four percent of the leaders indicated that no training was available. Only 17% had training opportunities available that were face-to-face with poultry professionals from the university and 27% had the opportunity to train face-to-face with experienced 4-H personnel. Sixty-three percent were aware of online manuals and videos, while 70% knew of printed training resources. In all, 48% of the 4-H leaders felt that training was adequate for the poultry component of their program.

Conclusion

The findings of the formative program evaluation have shown that many

4-H leaders do not use the published poultry curriculum nor do they talk about poultry careers in their programs. Most 4-H poultry programs focus on the poultry evaluation skills needed for judging activities and competitions. Although online manuals and training videos are available, they are either ineffective or not taken seriously by leaders. The results suggest that 4-H leaders have a need for additional training that is both effective and available on location at convenient times. An interactive virtual professional learning community dedicated to the 4-H poultry curriculum could be a viable solution to the problem. This is expatiated on in the next section.

Section 3: The Project

Introduction

`   The formative program evaluation was implemented to determine why 4-H is not helping attract students into the PSD. From the findings of the study, recommendations were developed to meet that need. In this section, a description of the recommended project is given as well as the goals. The rationale is discussed and a review of the literature is given.

Description and Goals

This project (Appendix A), logically derived from the data, is creating a three day professional development workshop for 4-H leaders to learn about careers in poultry and interact with PSD and industry personnel. A follow up interactive virtual professional learning community that includes 4-H leaders, 4-H volunteers, and poultry professionals would allow them to foster and maintain relationships for further professional development. Online learning is not new to the traditional universities. Many universities offer online courses and have the IT capability to support an online PLC as part of their CES program. Alternatively, there are free social networks, such as Facebook, that are user friendly and capable of hosting an online PLC.

This project has many goals, but the most important was to ensure that all 4-H leaders receive needed training to implement a quality poultry program in their county. The data showed that many 4-H leaders did not have the training necessary to provide a well-rounded program. By providing additional training in the poultry curriculum, youth participants would benefit by increasing their skill training in all areas of the poultry

curriculum and be more knowledgeable about related careers and employment possibilities.

In addition, my research project sought to foster working relationships among 4-H leaders, volunteers, and poultry professionals. By providing a venue for a collaborative work environment, 4-H leaders would not be working in isolation but as a group. This would help ensure that youth participants have high quality knowledge of and positive experiences with poultry.

<p style="text-align:center">Rationale</p>

It was originally thought that web-based training modules could address the gaps in 4-H leader knowledge of the poultry curriculum but after much research, it was concluded that a three day professional development workshop followed by an online interactive PLC would be more suitable. Web-based training would only afford a unidirectional flow of information. A professional development workshop could not only help 4-H leaders locate poultry curriculum training materials but also allow the three groups of participants to share experiences, expertise, and ideas.

The data that I collected from university students revealed that prior poultry experience and the availability of jobs were two factors that led them to choose poultry science as their major. The 4-H poultry curriculum covers both of these factors but 4-H leaders indicated that their youth participants had little knowledge in areas outside of those skills needed for poultry judging competitions and only limited or no knowledge of careers in poultry.

Since 4-H programs are statewide, yet divided by counties, it is typical that

CES personnel, 4-H leaders and volunteers work in isolation. The data from Section 2 showed that time constraints and distance are limitations to 4-H leader training that is imperative to the effective implementation of the 4-H poultry curriculum. Most 4-H leaders that did not have on-site training (64%) had to drive over 50 miles to participate in training and more than one-third indicated that training was available at inconvenient times. The establishment of a virtual PLC would bridge the time and distance limitations to training opportunities

Only 22% of the 4-H leaders indicated that face-to-face training was available with poultry professionals, and 34% said that face-to-face training was available with experienced 4-H personnel. Although most 4-H leaders were aware of online resources or printed material, some were not. An online PLC would make training with poultry professionals and experienced 4-H personnel available to all 4-H leaders across the state and help leaders locate the available resources that they may not be aware of.

Review of the Literature

Researchers agreed that a PLC model was the best way to ensure continual improvements in education (Dufour and Eaker, 1998). PLC's are communities in which colleagues who work in similar areas come together for collective learning purposes as a way to develop professionally and increase student achievement.

There are six characteristics of PLC's (Dufour and Eaker, 1998), which include a shared mission, vision, and values that can be described as shared understandings and common values. Collective inquiry drives a PLC where individual members continually seek new methods, test those methods, and reflect on their results. Members work in

collaborative teams and learn together as teams rather than individuals. PLCs are also committed to action and experimentation where aspirations become actions and visions become reality. They must be willing to experiment and collectively reflect upon their results. Additionally, members seek continuous improvement by constantly searching for a better way to do things. Finally, a PLC must not be assessed on these intentions but rather the results of improvement.

According to Dufour, Dufour, and Eaker (2008), an effective PLC is not a matter of implementing a new program but changing the culture of the organization. Individual interests and goals must be replaced by common purposes and goals. Cultural change is one of the most difficult parts of establishing a functional PLC. The authors state "It is impossible for a school or district to develop the capacity to function as a professional learning community without undergoing profound cultural shifts" (p. 91). The challenges are great but forming a PLC ensures that educators are not working in isolation but instead face the challenges of teaching interdependently with colleagues.

Professional learning communities have been described as "one of the most underused resources available to educators" (Caine and Caine, 2011). In order to be an effective tool, PLC's must have the right set of conditions and relationships. Members of the community must be able to listen and respect each other, although they do not always have to agree. Sharing strategies and methods as a group helps each individual member develop professionally by broadening his or her knowledge base.

Easton (2012) identified five principles of effective PLCs. Easton reports that PLCs must come from within the school by asking questions and seeking solutions as a

group. PLC's are unique and must be sensitive to one's own environment; there is no solution that fits every circumstance. Relationships are the cornerstone of PLC's and should be focused on passion and purpose, with no personal agendas and negativity. Additionally, PLC members understand that there are a variety of processes as well as solutions to the problems they face. Finally, PLC's should energize thinking among members through the contribution of others and as a result all professionally grow.

Professional development has always been important to the teaching profession but the way it is delivered is out of date with today's society (Brooks and Gibson, 2012). By changing the format in which professional learning opportunities are delivered, teachers have an opportunity to learn what is important to them while influences their teaching practices. With the current technology available, more technology-mediated models are emerging and giving teachers more options for professional development through online PLC's.

A study by Duncan-Howell (2010) showed that teachers involved in online PLC's committed an average of 1-3 hours a week to this format of professional development in addition to seminars, workshops, and meetings. The teachers were involved in online PLC's that were authentic, relevant and practical to their needs. Participants in the study indicated that they felt online PLC's were effective and 86.7% found it to be a worthwhile form of professional development.

In one qualitative PLC case study, it was found that there were seven factors that were essential for the success of an online community that focuses on professional development (Hew, 2009). Those factors included content of high quality, the technology

used, having members' with diverse views, discussions relevant to the community, the members' willingness to share, rapid response to questions, and an environment of respect. These findings are in agreement with earlier studies.

In a quantitative study on knowledge sharing in online PLC's several important factors were identified (Chen and Hung, 2010). The researchers stated that first the members must have the confidence and ability to answer questions in order to perceive that their sharing is beneficial, useful, and valuable to members. Members must feel that the information shared meets the needs of other members and that the shared knowledge is utilized. There should also be an interpersonal trust between members and the group should include reliability, good intentions, confidence, and compassion.

McConnell, et.al. (2013) compared the perceptions of two groups of teachers participating in in the same professional development using different PLC formats. One group of teachers was involved in face-to-face PLC, while the other group was involved in a virtual PLC, which included videoconferencing. The data suggested that teachers preferred face-to-face PLC's but when time and distance were obstacles, PLC's were effective when videoconferencing was used to help facilitate it.

Kim, et.al. (2012) incorporated the use of a wiki (a website that enables participants to contribute to, correct or make changes) in professional development activities to examine its impact in a PLC. Researchers concluded that teacher knowledge was positively affected; teachers participated more, and had a positive perception to the use of wiki technology. Teachers found the wiki technology to be an interactive way to share knowledge and collaborate with their peers.

Whitehouse (2011) examined an online PLC in which teachers had been involved in collaborative and social learning for two years. By seeing the work of other teachers and being able to discuss that work, teachers gained the confidence needed to successfully teach students in areas they previously had not. Teachers were able to reflect on their lessons, make needed revisions, and fundamentally change their teaching practices to increase student achievement.

Gruenbaum (2010) recommends surveys and focus groups to help guide the virtual PLC once established. These items will help determine the progress of individuals and the needs of the PLC. Stakeholders can then take action to further the development of the PLC to meet the needs of the participants.

Webinars are a useful tool used in virtual PLCs to address the challenge of those working in isolation due to time and distance factors (Grams, et. al. 2013). Webinars are online events hosted by an organization to a select group of people. The researchers suggest that four to six webinars per academic year is an adequate number with three to six weeks between them. Webinars should be planned for approximately 60-75 minutes in length allowing for discussion after the presentation. They should be scheduled on different days of the week and times of day to accommodate varying schedules for maximum participation.

Project Implementation

The findings and recommendations of the program evaluation will be presented to the 4-H director and the PSD in a meeting and a white paper will be provided for the information to be shared with other stakeholders as they see fit. I have recommended a

project in which the PSD can be proactive by providing a three day professional development workshop and follow up with a virtual PLC follow up to facilitate the poultry curriculum in 4-H programs. The workshop will establish relationships and train 4-H leaders on poultry careers. The PLC will include training materials and dialogue between 4-H leaders and poultry professionals from the PSD.

The project's implementation will depend on the PSD's willingness to devote the personnel and resources needed to make it successful. The initial startup will be important because 4-H leaders must find it useful to continue participation once they have met their workshop obligation. The PLC can only evolve if 4-H and poultry professionals work as a team to make it better through continued participation sharing information, ideas, and experience.

Needed Resources, Existing Supports, and Potential Barriers

The professional development workshop will require collaboration between the PSD, industry personnel, and alumni of the department. The support of the 4-H state director will also be helpful because it encourages 4-H leaders to participate. The follow up will require dedication of personnel capable of designing the online PLC and a media site with the ability to handle such an endeavor. Once those are in place and the PLC is in use, poultry professionals will need to be available to hold webinars via the PLC and to answer the questions of the 4-H leaders. Technical support may be needed to ensure the proper use of technology.

The existing supports are the willingness of the PSD and staff that will be tasked to participate in the workshop. Their positive relationships with the industry personnel,

alumni, and local businesses will be a great asset in gaining the cooperation of guest speakers. The follow up virtual PLC can benefit from the highly knowledgeable staff member with computer technology. The university campus has an IT department as well that could be utilized if necessary to bring the virtual PLC to fruition. The PSD also has a website that provides training videos that could become part of the PLC. The PSD can also providing funding to help finance the PLC.

Time is one potential barrier to implementation. It will take a substantial amount of time to prepare for a professional development workshop. Distance and time are also a potential barriers in getting the 4-H leaders in the same place at the same time and many will need accommodations for the three day workshop.

Proposal for Implementation

A member of the PSD faculty or staff will need to be chosen to oversee the development and implementation of the professional development workshop. This person will need to report to the PSD chair and arrange meetings with PSD faculty and staff as necessary to acquire additional input. He or she will be responsible for coordinating the activities necessary to secure the resources as needed and ensure that they are included in the workshop. He or she will also be responsible for scheduling other faculty and staff, industry personnel, and alumni for the professional development workshop. He or she will also have to moderate the virtual PLC once it becomes accessible to 4-H leaders.

Prior to the three day workshop, the coordinator of the virtual PLC will need to determine which features are needed such as video storage and viewing, a document file for uploading information, and a forum with the ability to chat, hold webinars and create

wikis for project work or videoconferencing. After all of the features are determined, all resources will be uploaded to the media site, a faculty and staff moderator and webinar schedule will be made, and an email will be sent to the 4-H director for approval. The 4-H director will in turn send an email to 4-H leaders via list serve.

I propose that all 4-H leaders should be required to attend the three day professional development workshop then complete specific tasks within the virtual PLC including webinars and participating in discussion threads on a monthly basis. The participation of the leaders will be recorded by the PSD and the media site ensuring that all are participating and completing the tasks in a timely manner.

Roles and Responsibilities of Participants

In order for my project to benefit 4-H members and the field of Poultry Science, continued support from PSD and 4-H administrators will be needed. Dedicated personnel will need to fill the roles of guest speakers then of moderators and developers of the media site. 4-H leader participants must convey their needs so that the proper resources can be put in place. Poultry professionals from the PSD and 4-H leaders will be encouraged to share their expertise and experience to keep the professional learning ongoing.

Project Evaluation

The goal of my project was to give all 4-H leaders high quality and effective training on location and at convenient times. A goal-based evaluation would not be feasible due to having to wait an extensive amount of time to see if more 4-H participants declared poultry science as their major. Alternatively, SMART goals (specific,

measureable, achievable, relevant, and time-bound) would be more appropriate (Doran, 1981).

Through research, I have developed SMART goals to base the evaluation of the effectiveness of the PLC (National Post-School Outcomes Center, n.d.). Within one year after the implementation of the 4-H poultry PLC, I expect to encounter more 4-H leaders in Georgia who are adequately trained and 4-H participants with increased skills in all areas of the 4-H poultry curriculum. The project will be evaluated by repeating the adult 4-H leader survey to determine the impact of the virtual PLC on the 4-H programs themselves.

Implications

By increasing the ability of 4-H leaders to implement a quality poultry program, youth participants will have more experience with poultry. Participants of my study will also become more aware of employment opportunities in the field. These are the aspects that current university students indicated influenced their decision to major in poultry science. By providing more meaningful experiences, it stands to reason that more college students would be interested in majoring in poultry science and filling the needs of the poultry industry.

Conclusion

In this section, a review of the literature pertaining to PLC's was addressed. My project of study was discussed and steps for implementation were outlined. An evaluation plan for the project was recommended. Finally, the project implications for social change were addressed. In the next section, I will reflect on my ability to influence social change.

Section 4: Reflections and Conclusions

Introduction

In this section, I reflect and make conclusions on the project and myself as a scholar. The project's strengths and remediation of limitations are discussed. I reflect on the personal outcomes of this research and how it strengthened me in many ways. Social change as a potential outcome of the research and the importance of the outcome is addressed. Finally, the implications, applications, and directions for further research are considered.

Project's Strengths

Having a three day professional development workshop offers a training opportunity to 4-H leaders and introduces them to PSD faculty and staff, industry personnel, and PSD alumni which allows for collaboration a the workshop and in the future. The virtual PLC follow up not only bridges the distance gap between 4-H leaders but also the distance between 4-H leaders and university poultry professionals. An online PLC also addresses time flexibility and allows 4-H leaders to learn at their convenience.

This type of professional development allows the PSD would have more control over the training of 4-H leaders. This control would insure that leaders were given the proper information to work with. It would also allow 4-H leaders the ability to ask questions directly and get much needed feedback from the university. The university has specialists in all areas of poultry, many of which have extension appointments.

Some 4-H leaders were unaware of the resources available to them. The virtual PLC would allow 4-H leaders to have control of their own learning and gives them

greater access to information that they would not otherwise have. In an online PLC, those resources will be available in one centralized location. In addition, the university poultry professionals will provide demonstration and informational videos, which will be used by the 4-H leaders in their programs. Videos on careers and job opportunities in poultry will augment the current practice of finding people that work in the industry who are willing to speak to their youth participants. Videos on the biotechnology used in poultry will also help 4-H leaders deliver the information to their youth.

Finally, 4-H leaders who do not currently have poultry programs may opt to add a poultry program. By giving 4-H leaders the available tools and knowledge needed to implement a quality poultry program, more youth could be participating in the poultry curriculum. This will increase the youths' awareness of the PSD and the opportunities available to them as they prepare to choose a career or attend college.

Project's Limitations

This project was specifically designed for 4-H leaders in the State of Georgia. I developed the program by using the information given by 4-H leaders only in Georgia. Although it could be modified for use in other states or across the United States, the current needs by other 4-H leaders in other areas is unknown.

The project could be limited by the 4-H leaders' lack participation or perceived lack of computer literacy skills. Those that do not feel competent in their computer skills are less likely to become involved. Making the PLC as user-friendly as possible will be necessary to reduce the incidence of non-participation.

Recommendations for Limitations Remediation

My project is limited to 4-H poultry program in the State of Georgia. My study could be expanded by collecting data in other states and by determining if a professional development workshop or an online PLC would be beneficial elsewhere. The needs of 4-H leaders in other states would dictate the design of individual workshops and PLC's. If the problems in Georgia were common in all states, a national PLC might be in order. The PLC could be expanded to other areas of the country so that it includes other community and state needs. Because this is an online community, there is a large potential for growth.

The lack or perceived lack of computer literacy for 4-H leaders could be resolved through regional workshops to help them become more comfortable with the format of the PLC. These workshops would include instructions and guides on how to participate and benefit from the online PLCs. A user-guide could also be developed to help leaders get started in the PLC. Modifications to the format should be made when necessary to ensure that 4-H leaders can utilize the PLC.

Alternative Recommendations

Other recommendations include a review of written training materials and providing them to all 4-H leaders. In addition, it is recommended that the online training videos and written material be reviewed and that all 4-H leaders have the links to the available resources. Additionally, the National 4-H Council should review the poultry curriculum to ensure that it adequate for use by 4-H leaders. Lastly, the PLCs could

expand to include workshops and certification programs in which participants can virtually attend a workshop, take an online test, and be awarded a certificate upon successful completion.

Scholarship

The most challenging part of this process was finding sources to support the knowledge that I acquired through my former educational experiences. It is easy to forget where something was learned, I found myself going backwards to find out where I had acquired the information so that it could be cited appropriately. Since I am a trained poultry scientist, I had to be careful not to insert my own personal assumptions. Before beginning this study, I thought I had an idea why the 4-H program did not help draw in students to the PSD. As I analyzed the data, I found that many of my assumptions were incorrect. Through this project, I have learned that perspective is an important tool when coming to a conclusion.

As a person who has always struggled with the ability to interpret written directions, I have found myself delayed several times in accomplishing the task at hand. The second literature review became a hurdle for me until I realized that it only related to the project. After becoming submerged in the literature and reading over the rubric time and time again, I finally sorted it out. There was a positive outcome from that delay; the process led me to literature on professional learning communities, wikis, and video conferencing. This obstacle became part of my interest and benefitted my study.

As a teacher practitioner, the process has helped me to read and interpret social science research. All of my previous experience was with scientific writing and

quantitative data which is much more concise. Qualitative data were foreign to me but over time I have learned to interpret qualitative studies and use qualitative data to answer questions. I have also learned that qualitative data can be interpreted in more than one way.

Leadership and Change

The process of this doctoral study has not only enhanced my leadership abilities but my confidence to lead as well. As a former student and employee of the PSD, I was well aware of the lack of graduates needed to fill jobs in the industry. I kept myself on the front line of recruitment even after leaving the department. To be able to offer a possible solution for increasing the number of 4-H participants who enter the PSD is an honor. It is an opportunity to give back to the department that has given so much to me.

If my project is implemented and becomes successful, change will come in the form of more students graduating from the PSD and more jobs being filled in the poultry industry. Through these changes the poultry industry can continue to provide a safe and affordable food supply to consumers all over the world. Some other poultry producing states and some COAs have similar difficulties attracting students. Georgia could be the first to implement this type of program and could be used as a model for other states to make a worldwide impact.

My focus now will be presenting my project study to stakeholders in Georgia. By doing so, the PSD can decide whether the project will come to fruition. I will also work towards publication in a peer reviewed academic journal such as The Journal of

Extension so that others may find answers from my study. I will also consider the use of an online PLC to improve the implementation and effectiveness of their programs.

Self-Analysis as Scholar

Many times I tend to work in solitude because of trust issues. I have learned to reach to others for support and guidance. Not only has my committee been instrumental in getting me through this process, but my fellow students as well. Only a student can relate to the surreal feelings of another student. The support and guidance given by other students is sometimes more valuable than any other. Through this I have learned to be supportive of and seek support from my peers.

Before conducting this study, I thought I had an idea of what the data would reveal. I was trained in researcher bias and allowed the data to show me the answers through an open mind. I quickly learned that my ideas were flawed and that only a well-designed study can find the truth. Through this experience, I learned the true value of social research.

Self-Analysis as Project Developer

In the literature review process for a project, I submerged myself in the current research, academic journals, and online resources. I found my initial project idea of reviewing the training materials and curriculum rather boring and did not foresee a great social impact in that project. I reviewed information on PLC's and began to question how a PLC could impact the 4-H leaders' knowledge base and subsequently the impact of their poultry programs. Knowing that distance would still be an obstacle, since 4-H is a statewide program, a virtual PLC came to mind and changed the course of my project. At

that moment I truly became excited about my project. I know that a successful online

PLC will not only increase the knowledge of 4-H leaders implementing the poultry

curriculum, but also give 4-H leaders the knowledge and confidence to add a poultry

component to their program.

Reflections

This formative program evaluation added to the limited body of knowledge and

could have a significant impact on 4-H programs, university enrollment, and

subsequently the quality of the workforce in the poultry industry. The research that I

conducted is significant because there is little or no research in this area and my data fills

a gap in knowledge. For some time, the university has tried to understand the reason that

4-H was ineffective in recruiting students into the PSD. My data indicates that a virtual

PLC has the potential to bridge the divide in distance and time, allowing for professional

development for all 4-H leaders statewide.

Implications, Applications, and Directions of Future Research

As other disciplines and departments seek to improve their programs, the use of

online PLCs provide an alternative platform for professional development. All members

of a PLC can benefit by sharing ideas whether they are new or veteran 4-H leaders. The

PLC may also give them more access to professionals at the university at times

convenient to all.

The application of my research could take place in other states and programs and

provide professional development to others who conclude that time and distance is the

problem. Not only does PLCs save time and money in travel, but they also can be used at times that are convenient to all participants.

If I were to further my research, I would include an evaluation of the online PLC to determine the effectiveness of professional learning and the perceptions of participants. In addition, future research could focus on the quality of programs provided to youth after leaders have participated in the workshop and/or virtual PLC to determine the impact of the program itself. Finally, research could determine the effectiveness on student enrollment at the university and an impact on the number of qualified workers available to the industry. By providing the appropriate number of trained individuals to the industry, a safe and affordable food supply of poultry products would be available to worldwide markets.

References

Archer, T. M. (2003). Web-based surveys. *Journal of Extension*, *41*(4). Retrieved from
http://www.joe.org/joe/2003august/tt6.php

Balsano, A. B., Phelps, E., Theokas, C., Lerner, J. V., & Lerner, R. M. (2009). Patterns of
early adolescents' participation in youth development programs having positive
youth development goals. *Journal of Research on Adolescence, 19*(2), 249-259.
doi: 10.1111/j.1532-7795.2009.00595.x

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

Boardman, D. S. (2008). The perceptions held by FFA members of employability skill
development associated with agriculture career development events. (M.S.
dissertation, University of Missouri). Retrieved May 15, 2011, from Dissertations
& Theses: Full Text. (Publication No. AAT 1472107).

Books, C. & Gibson, S. (2012). Professional learning in a digital age. *Canadian Journal
of Learning and Technology, 38*(2).

Brown, D. (1996). Brown's values-based, holistic model of career and life-role choices.
In B. Brown & Associates (Eds.), *Career choice and development* (pp. 337-372).
San Francisco, CA: Jossey-Bass.

Caine, G. & Caine, R. N. (2011). *Strengthening and enriching your professional learning
community: The art of learning together.* Portland, OR: Book News, Inc.

Chen, C. & Hung, S. (2010). Give or to receive? Factors influencing members'
knowledge sharing and community promotion in professional virtual

communities. *Information and Management, (47)*4, 226-236.

Colbath, S. A. & Morrish, D. G. (2010). What do college freshman know about

agriculture? An evaluation of agricultural literacy. *NACTA Journal, 5*. Retrieved

from https://www.nactateachers.org/attachments/article/Colbath_September_

2010_NACTA_JOURNAL-5.pdf

Creswell, J.W. (2012). *Educational research: Planning, conducting, and evaluating*

quantitative and qualitative research (3rd ed.). Upper Saddle River, NJ: Pearson

Education, Inc.

Dewey, J. (1938). *Experience and education*. New York, NY: MacMillan.

Doran, G. (1981). There's a S.M.A.R.T. way to write management's goals and

objectives. *Management Review, 70*(11), 35-36.

Dufour, R. & Eaker, R. (1998). *Professional learning communities at work: Best*

practices for enhancing student achievement. Bloomington, IN: Solution Tree

Press.

Dufour, R., Dufour, R., & Eaker, R. (2008). *Revisiting professional learning communities*

at work: New insights for improving schools. Bloomington, IN: Solution Tree

Press.

Duncan-Howell, J. (2010). Teachers making connections: Online communities as a

source of professional learning. *British Journal of Educational Technology,*

41(2), 324-340.

Easton, L. (2012). Principles of design energize learning communities: Practical tips put

the emphasis on learning. *Journal of Staff Development, 33*(4), 49-52.

Evans, J. & Mathur, A. (2005). The value of online surveys. *Internet Research 1* (2). Retrieved from http://shlee.myweb.uga.edu/onlinesurvey/valueofonlinesurveys. pdf

Esters, L., & Bowen, B. (2005). Factors influencing career choices of urban agricultural education students. *Journal of Agricultural Education, 46*(2). Retrieved from: http://pubs.aged.tamu.edu/jae/pdf/Vol46/46-02-24.pdf

Fitzpatrick, C., Gagne, K. H., Jones, R., Lobley, J., & Phelps, L. (2005). Life skills development in youth: Impact research in action. *Journal of Extension*, *43*(3). Retrieved from http://www.joe.org/journal-archive.php

Flynn, A., Igo, C. & Astroth, K. (2008). College aspirations of Montana 4-H youth. Paper presented at the Western Region AAAE Research Conference, Park City, Utah.

Future Farmers of America. (1975). *Official FFA Manual for the National Organization for Students of Vocational Agriculture.* Alexandria, VA: National FFA Supply Service.

Georgia 4-H. (n.d.) About Georgia 4-H. Retrieved April 15, 2011, from http://georgia4h.org/

Georgia 4-H Fact Sheet. (n.d.). Retrieved from http://georgia4h.org/main/headline/ fullstory.cfm?ID=262

Georgia FFA Association. (2011). Retrieved April 26, 2011, from http://www.georgiaffa.org/ index.php?page=ffainfo

Georgia House of Representatives. (1997). HB 594 - Poultry capital of the World; designate Georgia. Retrieved from http://www1.legis.ga.gov/legis/

1995_96/leg/fulltext/hb594.htm

Georgia Poultry Federation. (2011). 2011 Georgia poultry facts. Retrieved September

    12, 2011, from http://www.poultry.uga.edu/documents/ 2011GAPoultryFacts.pdf

Gillard, A., & Witt, P. (2008). Recruitment and retention in youth programs. *Journal of*

    Park and Recreation Administration, *26*(2), 177-188.

Ginzberg, E., Ginsburg, S.W., Axelrad, S., & Herma, J.L. (1951). *Occupational choice:*

    An approach to a general theory. New York, NY: Columbia University Press.

Goecker, Smith, Smith, & Goetz. (2010). *Employment opportunities for college*

    graduates in the food and agricultural sciences, United States, 2010-2015. United

    States Department of Agriculture and Purdue University.

Grams, J. Y., Hebert-Griffin, M., & Meeder, H. (2013). Virtual learning communities:

    Lessons from the field. Retrieved October 31, 2014 from

    http://www.meederconsulting.com /wp-content/uploads/2013/06/Virtual-PLC-

    Whitepaper.pdf

Gruenbaum, E. A. (2010). Creating online professional learning communities and how to

    translate practices to the virtual classroom. *eLearn Magazine,* May, 2010.

    Retrieved from http://elearnmag.acm.org/featured.cfm?aid=1806336

Hess, A. J. & Trexler, C. J. (2011). A qualitative study of agricultural literacy in urban

    youth: What do elementary students understand about the agri-food system?

    Journal of Extension, *52*(4). Retrieved from http://www.joe.org/journal-

    archive.php

Hew, F. K. (2009). Determinants of success for online communities: An analysis of three

communities in terms of members' perceived professional development. *Behavior & Information Technology 28*(5), 433-445.

Holland, J. L. (1966). *The psychology of vocational choice: A theory of personality types and model environments*. Waltham, MA: Blaisdell.

Institute of Education Sciences National Center for Education Statistics. (2010). Classification of instructional programs. Retrieved from http://nces.ed.gov/ipeds/cipcode/cipdetail.aspx?y=55&cipid=87751

Kaslon, L., Lodl, K., & Greve, V. (2005). Online leader training for 4-H volunteers: A case study of action research. *Journal of Extension*, *43*(2). Retrieved from http://www.joe.org/journal-archive.php

Kim, H., Miller, H., Herbert, B., Pederson, S., & Loving, C. (2012). Using a wiki in a scientist-teacher professional learning community: Impact on teacher perception changes. *Journal of Science Education Technology, 21,* 440-452.

Kolb, D. A. (1976).*The learning style inventory: Technical manual*. Boston, MA: MacBer & Company.

Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice-Hall.

Krumboltz, J. D., Mitchell, A. M., & Jones, G. B. (1976). A social learning theory of career selection. *The Counseling Psychologist, 6*(1), 71-81.

Lent, R. W., Brown, S. D., & Hackett, G. (1994).Toward a unifying social cognitive theory of career and academic interest, choice, and performance. *Journal of Vocational Behavior*, *45*(1), 79-122. doi: 10.1006/jvbe.1994.1027

Lobley, J. (2008). Who is volunteering for the Maine 4-H program? *Journal of Extension*, *46*(4). Retrieved from http://www.joe.org/journal-archive.php

Mason, M. (2010). Sample size and saturation in PhD studies using qualitative interviews. Forum: Qualitative Social Research. Retrieved March 31, 2013 from www.qualitative-research.net/index.php/fqs/article/view/1428/3027

McConnell, T. J., Parker, J. M., Eberhardt, J., Kohler, M. J. & Lundeburg, M. A. (2013). Virtual professional learning communities: Teachers' perceptions of virtual versus face-to-face professional development. *Journal of Science Education and Technology, 22*(3), 267-277.

National 4-H Council. (2011). Retrieved March 16, 2011, from http://www.4-h.org/about/leadership/national-4-h-council/

National Post-School Outcomes Center (n.d.) Writing S.M.A.R.T goals and evaluating your plan. Retrieved October 11, 2014 from http://ripap.org/sites/default/files/Transition/documents/SMART20%Goals.pdf

National Science Foundation. (2002). User-friendly handbook for project evaluation. Retrieved from http://www.nsf.gov/pubs/2002/nsf02057/start.htm

Nkwmbe, E. N. (2012). *Agriculture: What do children really know?* (Master's thesis) Retrieved from https://getd.libs.uga.edu/pdfs/nkwmbe_erik_n_201208mal.pdf

Opdenakker, R. (2006). Advantages and disadvantages of four interview techniques in qualitative research. Forum: Qualitative Social Research. Retrieved June 30, 2013 from www.qualitative-research.net/index.php/fqs/article/view/175/391

Parsons, F. (2008). *Choosing a vocation* (1909). Whitefish, MT: Kessinger Publishing.

Pfeiffer, W., & Jones, J. E. (1983). *The annual handbook for group facilitators*. La Jolla, CA: University Associates.

Phelps, L., & Fitzpatrick, C. (2005). Life skills development in youth: Impact research in action. *Journal of Extension*, *43*(3). Retrieved from http://www.joe.org/journal-archive.php

Piaget, J. (1970). *Genetic epistemology*. New York, NY: Columbia University Press.

Radhakrishna, R. & Ewing, J. C. (2011). Relationships between 4-H volunteer leader competencies and skills youth learn in 4-H programs. *Journal of Extension*, *49*(4). Retrieved from http://www.joe.org/journal-archive.php

Rockwell, S. K., Stohler, R. F., & Rudman, L. E. (1984). How 4-H helps career development. *Journal of Extension*, *22*(3). Retrieved from http://www.joe.org/joe/1984may/a1.php

Russell, S. T., & Heck, K. E. (2008). Middle school dropout? Enrollment trends in the California 4-H Youth Development Program. *Applied Developmental Science*, *12*(1), 1-9.

Sakamuro, S., & Stolley, K. (2010). White paper organization and other tips. Retrieved from http://owl.english.purdue.edu/owl/resource/546/02/

Schmitt-McQuitty, L., Smith, M. H., & Young, J. C. (2011). Preparing volunteers to meet the developmental needs of youth audiences. *Journal of Extension*, *49*(1). Retrieved from http://www.joe.org/journal-archive.php

Schupska, S. (July 1, 2010). High school students go on avian adventure. University of Georgia Public Affairs Office. Retrieved from http://georgiafaces.caes.uga.edu/index.cfm?public=viewStory&pk_id=3860

Smith, M. H., Meehan, C. L., & Dasher, H. S. (2009). Assessing volunteers' needs and interests to inform curriculum development in 4-H. *Journal of Extension*, *47* (1). Retrieved from http://www.joe.org/journal-archive.php

Spaulding, D. T. (2013). *Program evaluation in practice: Core concepts and examples for discussion and analysis*. San Francisco, CA: Jossey-Bass.

Stufflebeam, D. L. (1966). A depth study of the evaluation requirement. *Theory into Practice*, *5*, 121-133.

Stufflebeam, D. L., Foley, W. J., Gephart, W. J., Guba, E. G., Hammond, R. L., Merriman, H. O., & Provus, M. (1971). *Educational evaluation and decision making*. Itasca, IL: F. E. Peacock.

Stufflebeam, D. L. (1972). The relevance of the CIPP evaluation model for educational accountability. *SRIS Quarterly*, *5*(1).

Stufflebeam, D. L. (2002). Institutionalizing evaluation in schools. In S. Kellaghan (Ed.), *The International handbook of educational evaluation*. Boston, MA: Kluwer Academic Publishers.

Stufflebeam, D. L., McKee, B., & McKee, H. (October, 2003). The CIPP model for evaluation. Paper presented at the Annual Conference of the Oregon Program Evaluators Network, Portland, Oregon.

Super, D. E. (1957). *The psychology of careers*. New York, NY: Harper & Row.

Super, D. E. (1990). A life-span, life-space approach to career development. In B. Brown, & Associates (Eds.), *Career choice & development*. San Francisco, CA: Jossey-Bass.

Talbert, B. A., & Balschweid, M. A. (2006). Career aspirations of selected FFA members. *Journal of Agricultural Education*, *47*(2), 67-80. doi:10.5032/jae.2006.02067

Trochim, W. M. (2006). The research methods knowledge base (2nd ed.). Retrieved from http://www.socialresearchmethods.net/kb/

Troutman, T. D. (2008). Students' perceptions of agriculture at an 1862 land-grant institution. (Master's thesis) Retrieved from http://athenaeum.libs.uga.edu/bitstream/handle/10724/10909/ troutman_tracey_d_200812_mal.pdf?sequence=1

U.S. Poultry and Egg Association. (2010). Economic data. Retrieved May 4, 2011, from http://www.poultryegg.org/economic_data/

University of Georgia. (2009). 2009 Program review. Retrieved July 9, 2011, from http://www.poultry.uga.edu/about/documents/ProgramReview2009.pdf

University of Georgia. (n.d.). Avian adventures. Retrieved March 2, 2011, from http://www.poultry.uga.edu/schprogram/

University of Georgia. (2011). Young scholars internship program. Retrieved April 17, 2011, from http://ysp.caes.uga.edu/

Whitehouse, P. (2011). Networked teacher professional development: The case of

Globaloria. *Journal of Interactive Learning Resource, 22*(1), 139-165.

wiki. (n.d.) *Merriam-Webster.* Retrieved June 15, 2014, from http://www.merriam-

webster.com/dictionary/wiki

Appendix A: Careers in Poultry Professional Development

Careers in Poultry Professional Development Outcomes and Objectives

This project was developed from the findings of this study that showed that 4-H leaders felt that they were inadequately trained in the 4-H poultry curriculum. Few training opportunities were available on-site and few were with poultry professionals. In addition, many 4-H leaders had to travel great distances to attend training and some indicated that there were no training opportunities. Finally, 4-H leaders indicated that training was not available at convenient times.

The three day professional development workshop would allow all 4-H leaders to become part of a PLC and receive education on the poultry curriculum. It would give leaders access poultry professionals in the PSD and industry personnel while collaborating with other 4-H leaders who are interested in offering the poultry curriculum. The professional development follow up will offer continued support through a virtual PLC that would address the distance and time barrier involved in future training.

Project Goals

A. To educate 4-H leaders on the types of careers and jobs related to the poultry industry.

B. To provide 4-H leaders with the information needed to for them to implement career awareness in their poultry programs.

C. To provide continued support to 4-H leaders once they begin implementing career awareness in their poultry programs.

D. To establish a professional development culture and process that will allow training in other aspects of the 4-H poultry curriculum.

E. To provide 4-H leaders with the opportunity to collaborate with peers, university faculty, and industry personnel about careers in poultry.

Program Outcomes

A.1. Leaders will understand the types of careers and availability of jobs in poultry.

B.1. Leaders will be presented with the necessary information needed to implement career awareness in their poultry programs.

C.1. Leaders will collaborate with peers, university faculty, and industry personnel about careers in poultry.

D.1. Leaders will have access to on-going support once they begin implementing career awareness in their poultry programs.

E.1. A professional development culture will be established allowing training in other aspects of the 4-H poultry curriculum..

Program Objectives

A.1.a. As a result of the introduction to the types of careers and availability of jobs in poultry leaders will be able to develop and implement lessons for use in their poultry programs.

B.1.a. As a result of hearing from poultry professions, leaders will have the confidence and necessary knowledge to implement career awareness in their poultry programs.

C.1.a. As a result of the collaboration with peers, university faculty, and industry personnel leaders will leave the professional development with access to a network of individuals to support the implementation of career awareness curriculum.

D.1.a. As a result of career awareness professional development, leaders will have a contact for additional support, as well as their 4-H colleagues.

E.1.a. The professional development event will provide a culture of learning that will encourage leaders to become more proficient in delivering the 4-H poultry curriculum.

Professional Development Workshop Schedule

This professional development workshop takes place over a period of three days.

Day One: What is Poultry Science and What Opportunities are Available?

Goals
A. To educate 4-H leaders on the types of careers and jobs related to the poultry industry.
B. To provide 4-H leaders with the information needed to for them to implement career awareness in their poultry programs.
D. To establish a professional development culture and process that will allow training in other aspects of the 4-H poultry curriculum.
E. To provide 4-H leaders with the opportunity to collaborate with peers, university faculty, and industry personnel about careers in poultry.

Time	Activity
8:00-10:00	Participants gather at the Poultry Research Center for the morning session. The presentation will begin with Georgia's poultry production statistics and a description of Poultry Science. The university's Poultry Science faculty will be introduced and their area of expertise will be identified. In conclusion of the morning session, the vertical integration of the poultry industry will be broken down to explain the components of each segment.
10:00-10:15	Refreshments and restroom break

10:15-10:45	Speaker 1 (environmental specialist) will discuss area of expertise, research, and relationship to the poultry industry.
10:45-11:15	Speaker 2 (hatchery specialist) will discuss area of expertise, research, and relationship to the poultry industry.
11:15-11:45	Speaker 3 (layer specialist) will discuss area of expertise, research, and relationship to the poultry industry.
11:45-12:45	Lunch provided by the Poultry Science Department featuring a variety of poultry products.
12:45-1:15	Speaker 4 (broiler specialist) will discuss area of expertise, research, and relationship to the poultry industry.
1:15-2:00	Speaker 5 (broiler breeder specialist) will discuss area of expertise, research, and relationship to the poultry industry.
2:00-2:15	Refreshments and restroom break
2:15-3:45	Tour of the Poultry Research Center
3:45-4:00	The day will conclude with a survey for additional questions that participants may have which will be addressed the following day. The second day's itinerary will be disclosed.

Day 2: Careers in Poultry Science

Goals

A. To educate 4-H leaders on the types of careers and jobs related to the poultry industry.

B. To provide 4-H leaders with the information needed to for them to implement career awareness in their poultry programs.

D. To establish a professional development culture and process that will allow training in other aspects of the 4-H poultry curriculum.

E. To provide 4-H leaders with the opportunity to collaborate with peers, university faculty, and industry personnel about careers in poultry.

Time	Activity
8:00-8:30	Participants will meet at the Poultry Diagnostic Research Center. Questions from the first day will be answered.
8:30-10:00	Presentation will be given by poultry veterinarians discussing their role in the poultry industry and poultry health.
10:00-10:15	Refreshments and restroom break.
10:15-11:00	Tour of Poultry Diagnostic Research Center.
11:00-11:30	Speaker 1 discusses specialty areas in poultry products.
11:30-1:00	Lunch at a local restaurant serving free range poultry products.
1:00-1:30	Participants will meet at the Poultry Science department on campus. Speaker 2 (geneticist) will discuss area of expertise, research, and relationship to the poultry industry.

1:30-2:00	Speaker 3 (nutritionist) will discuss area of expertise, research, and relationship to the poultry industry.
2:00-2:30	Speaker 4 (animal behaviorist) will discuss area of expertise, research, and relationship to the poultry industry.
2:30-2:45	Refreshments and restroom break.
2:45-3:45	Tour of the Poultry Science Department.
3:45-4:00	The day will conclude with a survey for additional questions that participants may have which will be addressed the following day. The third day's itinerary will be disclosed.

Day 3: Who Works in the Poultry Industry?

	Goals
A. To educate 4-H leaders on the types of careers and jobs related to the poultry industry. B. To provide 4-H leaders with the information needed to for them to implement career awareness in their poultry programs. C. To provide continued support to 4-H leaders once they begin implementing career awareness in their poultry programs. D. To establish a professional development culture and process that will allow training in other aspects of the 4-H poultry curriculum. E. To provide 4-H leaders with the opportunity to collaborate with peers, university faculty, and industry personnel about careers in poultry.
8:00-8:30	Participants will meet at the Poultry Science Department. Questions from the second day will be answered.
8:30-9:15	Speaker 1 (poultry industry human resources manager) will discuss the needs of the industry and employment opportunities available, including job qualifications.
9:15-9:45	Speaker 2 (former alumnae working in a segment of the poultry industry) will discuss a typical work day, job satisfaction, and future opportunities.
9:45-10:00	Refreshments and restroom break.

10:00-10:30	Speaker 3 (former alumnae working in a segment of the poultry industry) will discuss a typical work day, job satisfaction, and future opportunities.
10:30-11:00	Speaker 4 (former alumnae working in a segment of the poultry industry) will discuss a typical work day, job satisfaction, and future opportunities.
11:00-11:30	Speaker 5 (former alumnae operating own small business in specialty poultry products) will discuss a typical work day, job satisfaction, and future opportunities.
11:30-2:00	Lunch at a local restaurant serving poultry products. Tour of downtown area.
2:00-2:30	Participants meet at the Poultry Science Department. Speaker 4 (food safety specialist) will discuss area of expertise, research, and relationship to the poultry industry
2:30-3:30	Presentation by the recruiting specialist on degree options at the university, programs of study, and financial aid.
3:30-4:00	Concluding remarks by the chair of the Poultry Science Department to include answering any questions participants may have. Participants will complete a survey about their learning experience and how the workshop could be improved.

Follow-up

A virtual PLC will be established to reinforce the professional development culture and process that will allow further training of the 4-H poultry curriculum. The PLC will provide continued support to 4-H leaders once they begin implementing career awareness in their poultry programs. Additionally, 4-H leaders will be provided with the information needed for them to effectively implement other aspects of their poultry programs. Finally the PLC will allow 4-H leaders to foster their relationships so they can continue to collaborate with peers, university faculty, and industry personnel about the poultry curriculum.

Evaluation of Professional Development Session

Evaluation 1: Formative Feedback

Participant Name_____ County_____

Please answer each question to help maximize the usefulness of this session.

1-Not helpful	2- Somewhat helpful	3- Very helpful

1. University Faculty Speakers	1	2	3
2. PDRC Speakers	1	2	3
3. Poultry Industry Speakers	1	2	3
4. Industry HR Manager	1	2	3
5. University Recruitment Specialist	1	2	3
6. University Alumni	1	2	3
7. Facility Tours	1	2	3
8. Exposure to Poultry Products	1	2	3
9. Overall Experience	1	2	3

10. Please provide any additional information that might be beneficial in planning future workshops.

Evaluation 2: Outcome Based

Participant Name_____ County_____

Please provide a thorough answer to each question

1. Do you feel you have enough knowledge about careers in poultry and job availability

to implement the career awareness portion of the 4-H poultry curriculum?

2. How did the collaboration with your peers, university faculty, and industry personnel

help you prepare to implement the career awareness portion of the 4-H poultry

curriculum?

3. How did the facility tours in the professional development workshop increase your

knowledge about poultry careers?

4. How did the exposure to a variety of poultry products in the professional development workshop increase your knowledge about poultry careers?

5. How successful do you think you will be in implementing the career awareness portion of the 4-H poultry curriculum?

6. What are your concerns about implementing career awareness in your poultry program?

Evaluation 3: Summative Evaluation

Participant Name_____ County _____

Please provide a thorough answer to each question

1. Did your training in careers in poultry with youth members go the way you thought it would?

2. How did youth members react to the career awareness training they received?

3. Are there any obstacles in implementing poultry career awareness in your program?

4. What do you think went particularly well in your careers in poultry training?

5. What might you change the next time you provide training to youth members on careers in poultry?

6. Do you have any additional feedback you would like to give on your experience in careers in poultry training with youth members?

7. What advice do you have that might be beneficial to other 4-H leaders in the future when implementing the career awareness portion of the curriculum?

Appendix B: University Student Consent Form

You are invited to take part in a research study to evaluate the implementation of the poultry component of the 4-H Youth Development Program. The researcher is inviting current university students who have declared poultry science as their major to be in the study. This form is part of a process called "informed consent" to allow you to understand this study before deciding whether to take part.

This study is being conducted by a researcher named Peggy Armstrong, who is a doctoral student at Walden University.

Background Information:

The purpose of this study is to evaluate the implementation of the poultry component of the 4-H program and how it can be a better recruitment resource for the Poultry Science Department.

Procedures:

If you agree to be in this study, you will be asked to:

- Read the consent form and agree to participate in the study which should take no more than 10 minutes.
- Schedule and participate in a one-on-one interview with the researcher which should take no more than 30 minutes. The interviewer will take notes and record the interview for analysis later.

Here are some sample questions:

Which youth development programs did you participate in during your primary and secondary school years?

Where do you see yourself 10 years after graduation?

Voluntary Nature of the Study:

This study is voluntary. Everyone will respect your decision of whether or not you choose to be in the study. If you decide to join the study now, you can still change your mind later. You may stop at any time.

Risks and Benefits of Being in the Study:

Being in this type of study involves some risk of the minor discomforts that can be encountered in daily life, such as fatigue or stress. Being in this study would not pose risk to your safety or wellbeing.

There are no individual benefits for participating in the study.

Payment:

There is no payment for participating in the study

Privacy:

Any information you provide will be kept confidential. The researcher will not use your personal information for any purposes outside of this research project. Also, the researcher will not provide your name or anything else that could identify you in the study reports. Data will be kept secure by transferring the data to a password protected flash drive and paper copies will be shredded. Data will be kept for a period of at least 5 years, as required by the university and then be disposed of in an appropriate manner.

Contacts and Questions:

You may ask any questions you have now. Or if you have questions later, you may contact the researcher via phone at 706-296-2446 or email at peggy.armstrong@waldenu.edu. If you want to talk privately about your rights as a participant, you can call Dr. Leilani Endicott. She is the Walden University representative who can discuss this with you. Her phone number is 1-800-925-3368, extension 1210. Walden University's approval number for this study is _____ and it expires on _____.

The researcher will give you a copy of this form to keep.

Statement of Consent:

I have read the above information and I feel I understand the study well enough to make a decision about my involvement. By signing below, I certify that I am 18 years of age or older and I understand that I am agreeing to the terms described above.

Printed name of participant_____

Date of consent_____

Participant's Signature_____

Researcher's signature_____

Appendix C: 4-H Adult Leader Implied Consent

You are invited to take part in a research study to evaluate the implementation of the poultry component of the 4-H Youth Development Program. The researcher is inviting adult 4-H leaders currently involved in 4-H poultry activities to be in the study. This form is part of a process called "informed consent" to allow you to understand this study before deciding whether to take part.

This study is being conducted by a researcher named Peggy Armstrong, who is a doctoral student at Walden University.

Background Information:

The purpose of this study is to evaluate the implementation of the poultry component of the 4-H program to determine how it can be a better recruitment resource for the Poultry Science Department at a local land-grant university.

Procedures:

If you agree to be in this study, you will be asked to:

- Read the consent form and agree to participate in the study which should take no more than 10 minutes.
- Complete a written survey questionnaire one time which should take no more than 15 minutes

Here are some sample questions:

What training opportunities are available to 4-H leaders regarding poultry?

Do you use the poultry "Skills for Life" series published by National 4-H Council in your program?

Voluntary Nature of the Study:

This study is voluntary. Everyone will respect your decision of whether or not you choose to be in the study. If you decide to join the study now, you can still change your mind later. You may stop at any time

Risks and Benefits of Being in the Study:

Being in this type of study involves some risk of the minor discomforts that can be encountered in daily life, such as fatigue or stress. Being in this study would not pose risk to your safety or wellbeing.

There are no individual benefits for participating in the study.

Payment:

There is no payment for participating in the study

Privacy:

Any information you provide is anonymous and will be kept confidential. The researcher will not use your personal information for any purposes outside of this research project. Also, the researcher will not ask your name or anything else that could identify you in the study reports. Data will be kept secure by transferring the data to a password protected flash drive and paper copies will be shredded. Data will be kept for a period of at least 5 years, as required by the university and then be disposed of in an appropriate manner.

Contacts and Questions:

You may ask any questions you have now. Or if you have questions later, you may contact the researcher via phone at 706-296-2446 or email at peggy.armstrong@waldenu.edu. If you want to talk privately about your rights as a participant, you can call Dr. Leilani Endicott. She is the Walden University representative who can discuss this with you. Her phone number is 1-800-925-3368, extension 1210. Walden University's approval number for this study is _____ and it expires on _____.

Please keep a copy of this for your records.

Statement of Consent:

I have read the above information and I feel I understand the study well enough to make a decision about my involvement. By completing the survey, I understand that I am agreeing to the terms described above.

Appendix D: Interview Protocol

Date: _____

Time: _____

Participant: _____

Prior to the interview, the researcher will introduce herself and explain the procedure. The researcher will ask if the participant if he or she has any questions before continuing.

1. Demographics

    a. What is your declared major? Minor?

        [ ]

    b. What is your current college classification?

        [ ]

    c. Name and describe the community or communities where you attended middle and high school.

        [ ]

2. Experience

    a. Which youth development programs did you participate in during your primary and secondary school years?

        [ ]

    b. What activities did you participate in that were associated with the youth development program(s)?

c. Describe your prior experiences with poultry prior to selecting your college major.

3. Motivation/Influence

a. What do you believe influenced you to choose poultry science as your major?

b. When did you choose to pursue a degree in poultry science?

4. Future

    a. What type of employment do you intend to seek after graduation?

<div style="border:1px solid black; height:120px;"></div>

    b. Where do you see yourself 10 years after graduation?

<div style="border:1px solid black; height:260px;"></div>

    Additional notes:

<div style="border:1px solid black; height:380px;"></div>

Thank you for your participation

Appendix E: 4-H Adult Leader Survey

The purpose of this survey is to evaluate the implementation of the poultry component of the 4-H Youth Development Program. <u>This survey is anonymous</u> which means your name or anything else that could identify you will not be asked. This survey should take 15 minutes or less to complete.

Instructions: For each question, please circle the correct or best option.

1. Which best describes you?
   a. 4-H Cooperative Extension Service agent
   b. Other Cooperative Extension Service personnel
   c. 4-H volunteer

2. On average, how many youth members are involved in 4-H poultry activities in your location?
   a. 1-10
   b. 11-20
   c. 21-30
   d. Over 30

3. Indicate your gender?
   a. Male
   b. female

4. Your age in years?
   a. under 25
   b. 25-34
   c. 35-45
   d. 46 or over

5. Were you involved in 4-H when you were in middle or senior high school?
   a. yes
   b. no

6. Indicate your level of education?
   a. some high school
   b. high school graduate
   c. some college
   d. college degree
   e. post-graduate degree
   f. other _____ (categorized)

7. What training opportunities are available to you regarding poultry?
   (select all that apply)
   a. face-to-face with poultry professionals
   b. face-to-face with experienced 4-H personnel
   c. online manuals or videos
   d. reading printed manuals
   e. none

8. Are training opportunities offered at your location?
   a. yes
   b. no

9. If no to question 8, how far do you have to go to participate in a training
   session?
   a. up to 25 miles
   b. 26-50 miles
   c. over 50 miles

10. Are training opportunities offered at convenient times?
    a. yes
    b. No

11. Is the training adequate?
    a. yes
    b. no

12. Do you use the poultry "Skills for Life" series published by National 4-H
Council in your program?
    a. yes
    b. no

13. Do you use the "Poultry Evaluation Guide" published by the National 4-H Council in your program?
    a. yes
    b. no

14. Are the resources published by the National 4-H Council adequate for use in your program?
    a. yes
    b. no

15. What role do parents play in your poultry 4-H program? (select all that apply)
    a. assist in meetings or activities
    b. guest speakers
    c. Chaperons for activities or fairs
    d. other _____ (categorized)
    e. not used

16. What role do community members play in your poultry 4-H program?
    (select all that apply)
    a. assists in meetings or activities
    b. guest speakers
    c. chaperons activities and fairs
    d. other _____
    e. not used

17. Where do you implement the poultry component of 4-H?
    a. local school
    b. other public facility
    c. private property
    d. other _____

18. When do you have your 4-H meetings to implement the poultry activities?
    (select all that apply)
    a. during school instructional time
    b. after school hours
    c. weekends

19. How often do you hold 4-H group meetings to implement the poultry activities?
   a. weekly
   b. monthly
   c. other _____

20. Please rate the level of ability of youth participants in the following skill areas after participating in 4-H poultry activities.

Skill	Extensive	Some	None
Feeding and caring for poultry			
Keeping poultry healthy			
Evaluating poultry			
Showing poultry			
Being knowledgeable consumers			
Keeping poultry records			
Identifying poultry management problems			
Explaining feed ingredients used in poultry ration			
Performing poultry security check			
Identifying poultry breeds			
Identifying poultry body parts			
Developing a poultry budget			
Understanding poultry flock pecking order			
Grading poultry carcasses			
Judging poultry			
Using an egg candler			
Using the APA Standard of Perfection			
Recognizing signs of healthy poultry			
Researching common diseases			
Describing poultry careers			
Handling eggs safely			
Grading eggs			
Incubating eggs			
Processing chickens			
Managing a small flock of poultry			
Describing various biotechnology used in poultry			

Thank you for your participation!

Appendix F: Permission to Modify 4-H Instrument

Reprint and Use Permission Form

Today's Date: 08/06/2012

Contact Name: Peggy Armstrong
Title: Student
Company/Organization: Walden University
Address: 3596 Hwy 80 N
Warrenton, GA 30828

Telephone: 706-296-2446
Fax: 706-542-1827
E-mail: parmstro@uga.edu

PERMISSION SOUGHT FOR REPRINT OR USE OF:
The questionnaire in the back of the Poultry Helper's Guide which is used to measure the impact of the poultry activities.

STATEMENT OF INTENDED USE:
I'd like to modify the instrument for use in a formative program evaluation in my graduate studies.

IS YOUR ORGANIZATION A NON-PROFIT 501C3? Yes _____ No __X__

PERMISSION GRANTED SUBJECT TO THE FOLLOWING CONDITIONS:
- Permission for one-time use only
- Permission restricted to intended use described above
- No commercial or for-profit use
- No right to syndicate, rent or loan.
- Prior approval by National 4-H Council required if materials will be edited
- The following must appear in proximity to the subject material:
  Reprinted from (name of piece) with permission of National 4-H Council
- For use on a web site, the following must appear:
  (Name of piece) used with permission of National 4-H Council

PLEASE CONFIRM YOUR AGREEMENT WITH THE FOREGOING BY SIGNING IN THE SPACE PROVIDED BELOW AND RETURNING THE SIGNED FORM BY MAIL OR ELECTRONICALLY TO NATIONAL 4-H COUNCIL, 7100 Connecticut Ave., Chevy Chase, MD 20815-4999 Email: twheeler@fourhcouncil.edu

Agreed:

By: _____
Printed Name: Peggy Armstrong
Title: Student of Walden University
Date: August 6, 2012

Approved:
National 4-H Council
By: _____
Tara D. M. Wheeler, Director

Date: 8/13/12

Appendix G: 4-H Instrment

4-H Project Helper
Poultry Series Evaluation

Did the youth participating in the 4-H "Skills for Life" Poultry activities change as a result of their experiences? Did they learn new poultry management skills? Do they now have more confidence with several important life skills such as communicating with others, making decisions and leading others? For your use the following

evaluation has been prepared. The Success Indicator for each activity in each guide is listed. Simply note the youth's skill level prior to the activity and after the activity. Insert the project or life skill into the following sentence and use the three point scale for scoring.

"Youth have the ability to _____."

Evaluating the Impact

1 - To a great extent   2 - Somewhat   3 - Not at all

	Before	After		Before	After
Make good decisions	1 2 3	1 2 3	Feed and care for their poultry	1 2 3	1 2 3
Communicate with others	1 2 3	1 2 3	Keep their poultry healthy	1 2 3	1 2 3
Lead self and others	1 2 3	1 2 3	Evaluate poultry	1 2 3	1 2 3
Plan and organize	1 2 3	1 2 3	Show poultry	1 2 3	1 2 3
Accept responsibility	1 2 3	1 2 3	Be knowledgeable consumers of poultry products	1 2 3	1 2 3

Poultry 1–Scratching the Surface	Before	After
Keep poultry records	1 2 3	1 2 3
Identify poultry management problems	1 2 3	1 2 3
Interview a poultry owner	1 2 3	1 2 3
Explain how feed ingredients are used in a ration	1 2 3	1 2 3
Perform a poultry security check	1 2 3	1 2 3
Organize a poultry showmanship contest	1 2 3	1 2 3
Discover types of poultry products	1 2 3	1 2 3
Identify at least six breeds of poultry	1 2 3	1 2 3
Identify at least 30 poultry body parts	1 2 3	1 2 3
Demonstrate one or more poultry fitting techniques	1 2 3	1 2 3
Examine normal poultry	1 2 3	1 2 3

Poultry 2 – Testing Your Wings	Before	After
Develop a poultry budget	1 2 3	1 2 3
Discover your bird's pecking order	1 2 3	1 2 3
Explore retail poultry products	1 2 3	1 2 3
Investigate a bird skeleton	1 2 3	1 2 3
Grade poultry carcasses	1 2 3	1 2 3
Judge poultry	1 2 3	1 2 3
Make and use an egg candler	1 2 3	1 2 3
Use the APA Standard of Perfection	1 2 3	1 2 3
Identify parts of a hen's reproductive tract	1 2 3	1 2 3
Critique advertisements	1 2 3	1 2 3
Describe poultry careers	1 2 3	1 2 3
Recognize the signs of a healthy bird	1 2 3	1 2 3
Research common poultry diseases	1 2 3	1 2 3
Identify parts of a bird's digestive system	1 2 3	1 2 3
Explore a poultry feed tag	1 2 3	1 2 3

Poultry 3 – Flocking Together	Before	After
Sponsor and conduct a poultry judging clinic	1 2 3	1 2 3
Reserve and reconstruct a bird's skeleton	1 2 3	1 2 3
Manage a small flock of laying birds	1 2 3	1 2 3
Determine inheritance in chickens	1 2 3	1 2 3
Describe various biotechnology concepts	1 2 3	1 2 3
Process a chicken	1 2 3	1 2 3
Conduct experiments with eggs	1 2 3	1 2 3
Lead an egg craft project	1 2 3	1 2 3
Handle eggs safely	1 2 3	1 2 3
Play the game Cacklegories	1 2 3	1 2 3
Identify and discuss poultry-related ethical issues	1 2 3	1 2 3
Describe character traits employees want	1 2 3	1 2 3
Identify 20 careers involving poultry	1 2 3	1 2 3

Poultry Project Helper's Guide	Before	After
Plan a one-year program of group activities	1 2 3	1 2 3
Organize and conduct a poultry quiz bowl	1 2 3	1 2 3
Plan and conduct a poultry fun day	1 2 3	1 2 3
Plan and conduct a poultry skillathon	1 2 3	1 2 3
Prepare and give presentations	1 2 3	1 2 3
Use words related to poultry	1 2 3	1 2 3
Identify poultry terms	1 2 3	1 2 3
Organize and play B-I-R-D-S Bingo	1 2 3	1 2 3
Collect, identify and classify poultry feed ingredients	1 2 3	1 2 3
Hatch eggs using an incubator	1 2 3	1 2 3
Complete poultry records	1 2 3	1 2 3
View embryo heart pulsations	1 2 3	1 2 3
Grade eggs	1 2 3	1 2 3

35

Appendix H: Letters of Cooperation

The University of Georgia

College of Agricultural Environmental Sciences
Department of Poultry Science

June 25, 2013

Ms. Peggy Armstrong
3596 Highway 80 North
Warrenton, GA 30823

Dear Ms. Armstrong:

I have reviewed your research proposal and am fully supportive of providing assistance in conducting the study entitled, "4-H Youth Development Program as a Recruitment Tool for Colleges of Agriculture: A Formative Evaluation."

As part of this study, I understand you will need our support in forwarding communications from you to current poultry science majors in our department. I also understand that an individual's participation will be completely voluntary and at his/her own discretion. Likewise, I understand the Department of Poultry Science reserves the right to withdraw from the study at any time if that is deemed advisable or necessary.

I understand that the responsibilities of the Department of Poultry Science include forwarding communication from you to current poultry science students. I confirm I am authorized to approve contacting students for the purposes outlined in your proposal.

I understand the data collected for the purposes of this study will remain entirely confidential and may not be provided to anyone outside of the research team without permission from the Walden University IRB.

Sincerely,

M P Lacy

Michael P. Lacy
Professor and Department Head

The University of Georgia

College of Agricultural and Environmental Sciences
Cooperative Extension

Arch D. Smith
State 4-H Leader /
Director of 4-H

Office of the State 4-H Leader
302 Hoke Smith Annex
Athens, GA 30602-4356
Telephone (706) 542 4H4H
Fax (706) 542 4373
cdc4h@uga.edu or asmith@uga.edu

August 30, 2012

Dear Peggy Armstrong:

Based on my review of your research proposal, I give permission for you to conduct the study entitled 4-H Youth Development Program as a recruitment tool for Colleges of Agriculture: A formative evaluation within the Georgia 4-H Youth Development Program. As part of this study, I authorize you to pilot the instruments, take a statewide census to determine the target population, obtain signed consent forms and collect data from participants. Individuals' participation will be voluntary and at their own discretion.

We understand that our organization's responsibilities include: responding to statewide census via email and distributing instruments and consent forms to participants to complete, collecting them and mailing them back to the researcher for both piloting and data collection phases. We reserve the right to withdraw from the study at any time if our circumstances change.

I confirm that I am authorized to approve research in this setting.

I understand that the data collected will remain entirely confidential and may not be provided to anyone outside of the research team without permission from the Walden University IRB.
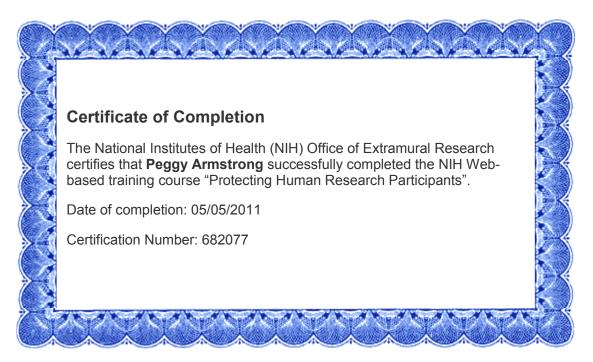
Sincerely,

Arch D. Smith
Director of 4-H / State 4-H Leader
Senior Public Service Associate
University of Georgia
College of Agricultural and Environmental Sciences
Cooperative Extension

Learning for Life
Agriculture and Natural Resources • Family and Consumer Sciences • 4-H Youth
ugaextension.com
An Equal Opportunity/Affirmative Action Institution

Appendix I: National Institute of Health Training Cerytificate

Certificate of Completion

The National Institutes of Health (NIH) Office of Extramural Research certifies that **Peggy Armstrong** successfully completed the NIH Web-based training course "Protecting Human Research Participants".

Date of completion: 05/05/2011

Certification Number: 682077