EXPERIENCES NEEDED TO PREPARE EARLY CAREER AGRICULTURE TEACHERS

A Thesis

by

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ABSTRACT

The purpose of this study was to describe experiences National Association of Agricultural Educators Outstanding Young Member award winners would have liked to have had prior to becoming an agriculture teacher. A modified Delphi method was implemented to collect data utilizing three rounds of researcher-developed questionnaires. Round one included open-ended and demographic-type questions. Rounds two and three were constructed using panelists' answers from previous rounds and included Likert-type, five-point rating scales. Items failing to reach consensus of agreement, established *a priori*, after round three were not included in the final compiled list of experiences. Data were analyzed for means, frequencies, and percentages.

The panel of experts included the Outstanding Young Member award winners (*N* = 29) from 2010-2014. Response rates for rounds one, two, and three were 79.3% (n = 23), 79.3% (n = 23), and 75.9% (n = 22) respectively. This study focused on three main questions: 1) Which aspects of teaching agriculture were the panelists most prepared for by their teacher preparation program? 2) Which aspects were they least prepared for? 3) What experiences would these panelists have liked to have had prior to becoming an agriculture teacher?

The major findings of this study revealed multiple aspects of teaching agriculture that panelists were adequately prepared for by their teacher preparation programs including teaching animal science, teaching FFA, classroom instruction, and developing curriculum, yet there were aspects that panelists agreed they were not prepared for

including planning for retirement and work-life balance. Additionally, the panelists agreed upon multiple experiences they would have liked to have had prior to becoming an agriculture teacher. These included work-life balance, working with the community, time management strategies, and greenhouse operations.

The findings of this study may serve as suggestions for topics to be covered by teacher in-service workshops and throughout teacher preparation programs. Teacher preparation and in-service should focus on planning for retirement and work-life balance. Other additions to curriculum may include greenhouse operations and time management strategies. Finally, it is suggested that teacher preparation programs perform a needs assessment of their students to determine strengths and weaknesses for each program.

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CHAPTER I

INTRODUCTION

Researchers have found that there are many problems faced by early career agriculture teachers in the profession today (Birkenholz & Harbstreit, 1987; Camp, Broyles, & Skelton, 2002; Duncan, Ricketts, Peake, & Uesseler, 2006; Edwards & Briers, 1999; Garton & Chung, 1996; Joerger, 2002; Layfield & Dobbins, 2002; Mundt & Connors, 1999; Myers, Dyer, & Washburn, 2005; Roberts & Dyer, 2004; Stair, Warner, & Moore, 2012; Talbert, Camp, & Heath-Camp, 1994; Veenman, 1984; Washburn & Dyer, 2006). Issues such as organizing an effective alumni chapter, organizing and planning FFA chapter events and activities, and the management of student discipline in the classroom are just three of the plethora of major problems found to be plaguing early career agriculture teachers (Myers, Dyer, & Washburn, 2005). There is also a growing shortage of qualified teachers in the field of agricultural education as well as issues with teacher retention (Camp, Broyles, & Skelton, 2002).

In order to combat and overcome these obstacles, many studies have been conducted to determine the in-service needs of early career agriculture teachers so that specific issues may be addressed by teachers themselves, schools with agriculture programs, and teacher preparation programs across the nation (Birkenholz & Harbstreit, 1987; Duncan, Ricketts, Peake, & Uesseler, 2006; Edwards & Briers, 1999; Garton & Chung, 1996; Joerger, 2002; Layfield & Dobbins, 2002; Mundt & Connors, 1999; Roberts & Dyer, 2004; Washburn & Dyer, 2006). The need for this study stems from a

lack of current research concerning the specific reported needs of early career agriculture teachers throughout the United States.

Statement of the Problem

For new teachers, the transition from being a student teacher, training in a classroom under the constant guidance of an experienced teacher, into the harsh reality that is their first official teaching job can be a difficult, stressful, and sometimes a traumatic experience (Veenman, 1984). Teacher preparation programs across all fields of education aim to equip their students with the tools needed to be a successful educator; however, it is unrealistic to assume that these programs are capable of completely preparing pre-service teachers for every possible role they must fill and each situation they may encounter when running their own classroom (Lytle, 2000). The National Strategic Plan and Action Agenda for Agricultural Education calls for "An abundance of highly motivated, well-educated teachers in all disciplines, pre-kindergarten through adult, providing agriculture, food, fiber, and natural resources systems education," and challenges teacher preparation programs to "…rely on the most current and broadly representative research for developing curriculum and courses of study" (National Council for Agricultural Education, 2000. p.4). Because the job description and definition of a qualified teacher is in a constant state of reformation, teacher preparation programs must also frequently re-invent themselves in order to avoid becoming irrelevant, excessive, and redundant (Lytle, 2000).

Studies have shown that early career agriculture teachers are plagued with many problems in their career that, if not addressed, will cause them to feel overwhelmed and

ineffective and eventually seek employment opportunities elsewhere (Bennett, Iverson, Rohs, Langone, & Edwards, 2002). The number of open agriculture teaching positions is on the rise, yet there is a shortage in the number of qualified teachers willing to accept those positions (Kantrovich, 2010). The field of agricultural education cannot afford for these qualified, early career teachers to leave the profession.

In order to discover what aspects teacher preparation programs are lacking in, this study solicited the knowledge and opinions of the National Association of Agricultural Educators Outstanding Young Member award winning early career teachers. These teachers were considered to be the best of the best among early career agriculture teacher across the nation. Accordingly, the researchers believed that, by surveying these award winners to determine what they would have liked to have known more about in their teacher preparation programs, the findings could serve as a guide for teacher in-service and preparation programs to see what worked well? What did not work well? What may need to be added or discussed more in depth? The ultimate goal would be to further improve the quality of agricultural teacher preparation programs to help encourage these early career teachers to remain in the profession longer and decrease the teacher shortage.

Conceptual Framework

The conceptual framework for this study is rooted in the quest for a solution to the problem of early teacher attrition across multiple fields of teaching, although specifically for this study, the researchers focused on the field of agricultural education. The framework for this study was based on Chapman's (1984) model of teacher

retention (Figure 2). The researchers modified this model of teacher retention to conform more closely with the subjects of this study, early career agriculture teacher award winners. This model of influences associated with teacher retention is shown below in Figure 1.

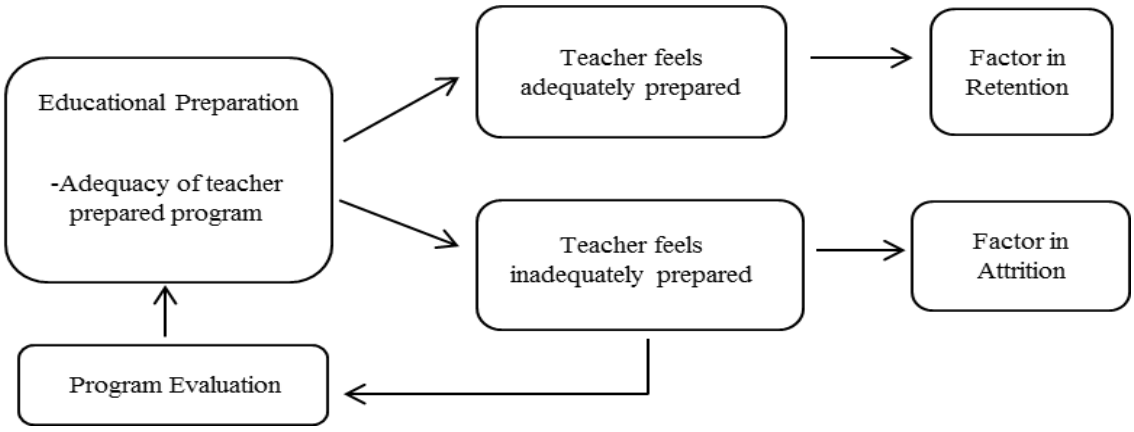

Figure 1: A conceptual model of the influences associated with teacher retention and attrition

This model may explain the idea that an early career teacher's perceived adequacy of preparation provided by the teacher preparation program could be a contributing factor in the decision to remain in or leave the teaching profession. The model in Figure 1 illustrates that if a teacher feels adequately prepared in a subject, they have a better chance of remaining in the teaching profession; however, if they feel inadequately prepared, attrition may ensue. As per the model in Figure 1, if these teachers report feeling inadequately prepared, a program evaluation may be needed. The

cycle is thereby renewed as the teacher preparation program makes adjustments in order to produce teachers who feel adequately prepared and remain in the profession.

Purpose and Objectives

The overarching purpose of this descriptive study is to determine what specific experiences award winning early career agriculture teachers throughout the United States would benefit from and may believe to be pertinent to their success as a teacher, FFA advisor, and SAE supervisor. An expert panel of early career agriculture teachers who were award winners was used to determine and compile a standardized list of experiences that were agreed upon to be needed by an individual in the field of agricultural education prior to becoming an agriculture teacher. This list may be used to guide teacher preparation programs, and possibly teacher in-service workshops, to offer a more focused and complete education. The research objectives of this study were as follows:

1. Identify the characteristics of early career agriculture teacher Outstanding Young Member award winners from 2010-2014 in the United States including age, sex, number of teachers in their agricultural education program, size of the school, number of years teaching, number of different programs taught at, highest degree obtained, and type of certification.
2. Compile a list of common factors associated with influencing these Outstanding Young Member award winners to pursue a career in agricultural education.
3. Discover which aspects of teaching agriculture early career teacher award winners were most prepared for by their teacher preparation program.

4. Discover which aspects of teaching agriculture early career teacher award winners were least prepared for by their teacher preparation program.
5. Compile a list of experiences, agreed upon by a panel of experts, needed to prepare early career agriculture teachers.

Definition of Terms

The following terms have been operationally defined for this study:

- Early career agriculture teacher (For the purpose of this study): an individual in their first through sixth year of teaching in a secondary agricultural education program in the United States.
- Outstanding Young Member: National Association of Agricultural Educators award given to members who have completed at least three but not more than five years of teaching in agricultural education (National Association of Agricultural Educators, 2015).
- The National FFA Organization (FFA): the intracurricular organization of, by, and for students enrolled in agricultural education programs that strives to help students gain personal growth, leadership and communication skills, responsibility, character, and citizenship through agriculturally related programs and activities (National FFA Organization, 2015b).
- Supervised Agriculture Experience (SAE): a project developed and carried out by students, with the supervision of their agriculture teacher, in the categories of Entrepreneurship, Placement, Research and Experimentation, or Exploratory. SAE is an integral part of a complete agricultural education program based on the

idea of learning by doing also known as experiential learning (National FFA Organization, 2015c).

- The Three-Circle Model: a model of instruction for agricultural education programs consisting of three main components which include classroom instruction/contextual learning, Supervised Agriculture Experience/experiential learning, and student leadership organizations such as FFA. (National FFA Organization, 2015d).
- Early teacher attrition: teachers who exit the professional altogether within the first few years of teaching (Darling-Hammond, 2003).
- Teacher education/ preparation program: a post-secondary program of study lasting, on average, 4 years that is dedicated to educating pre-service agriculture teachers in courses such as teaching methods, program planning, and student teaching (Myers & Dyer, 2004).
- Teacher in-service: Programs conducted to assist teachers, especially early career teachers, in developing and sharpening the knowledge and skills needed to conduct classrooms and properly educate students (Birkenholz & Harbstreit, 1987; Garton & Chung, 1996).

Limitations

The limitations of this study stemmed from the idea that the experiences of those agriculture teachers that have not received an Outstanding Young Member award from the National Association of Agricultural Educators may be different from those teachers who have. Results and responses received from this modified Delphi study may not be

typical of every early career agriculture teacher throughout the United States. The target population consisting of all Outstanding Young Member award winners from the years 2010-2014 was taken from a list provided by the National Association of Agricultural Educators. Any other teachers meeting the parameters of this study were not known, and therefore not used as part of the purposively selected sample group.

Assumptions

This research study was conducted under the following assumptions:

1. All agriculture teachers who received an Outstanding Young Member award in the years 2010-2014 were included in the sample of this research study as provided by the National Association of Agricultural Educators.
2. Respondents answered all questions of the study honestly and to the best of their ability.
3. The instrument developed is valid and measures the proper variables within the study.

Significance

The field of agricultural education continues to see an increase in the number of open agriculture teaching positions around the nation (Kantrovich, 2010). Newly qualified teachers are graduating from teacher education programs each year in adequate numbers, but not at rate that can efficiently combat the widespread increasing shortage of agriculture teachers (Kantrovich, 2010). According to the National Agricultural Supply and Demand Study conducted by Foster, Lawver, and Smith (2014), there were 86 full time and 10 part time vacancies of agriculture teaching positions across the

nation as of September 15, 2014. Furthermore, a reported total of 833 school based agricultural educators who taught in the 2013-2014 school year would not be returning to the classroom in 2014-2015 (Foster, Lawver, & Smith, 2014). Agricultural education is in dire need of an increase in the production of qualified teachers who want to teach. The aim of this study is to determine specific experiences award winning early career teachers, now having experienced teaching first-hand, would have liked to have had prior to acquiring a teaching position which they believe would be beneficial to them now as an agriculture teacher and FFA Advisor.

CHAPTER II

REVIEW OF LITERATURE

Introduction

A thorough literature review was conducted by the researcher to identify relevant research and describe the conceptual framework supporting this study. This review of literature was conducted in order to determine existing knowledge and research discussing agricultural education, teacher attrition, problems facing early career teachers, teacher preparation programs, and teacher in-service.

Agricultural Education

The beginnings of agricultural education in the American public school system can be traced back to 1917 when Congress passed the Smith-Hughes National Vocational Education Act which promoted the teaching of vocational education and included separate state boards, funding, areas and methods of study, teacher preparation and certification programs, and professional and student organizations (Rojewski, 2002). According to Talbert, Vaughn, Croom, and Lee (2007) vocational education was the umbrella under which agricultural education was established; hence, the past, present, and future of both entities will continue to coincide and symbiotically coexist with one another. One of the most influential individuals known in both of these fields today as the Father of Vocational Education, Charles Prosser, was quoted stating "The purpose of vocational education is to help a person secure a job, train him so that he can hold it after he gets it, and assist him in advancing to a better job," (Wirth, 1972). Aligning with this idea describing the purpose of vocational education, the National FFA Organization

(2015d) states “Agricultural education prepares students for successful careers and a lifetime of informed choices in the global agriculture, food, fiber, and natural resources system.”

Today agricultural education has been widespread throughout the fifty states and three U.S. territories and has grown to include over eight hundred thousand students in formal agricultural educational instructional programs (National Council for Agricultural Education, 2000). Although the field still retains and remembers much from the legislation that gave it life, the goals and structure of agricultural education have changed and broadened immensely from the previous mission of simply preparing students for work on the farm. In the words of one researcher, “It’s not just plows, cows, and sows anymore…” (Conroy, 2004).

Agricultural education as we know it today is based off of the principles found in the three-circle model (Croom, 2008). The curriculum is modeled after the interrelationship of three major components: classroom/laboratory instruction, supervised agricultural experience/experiential learning, and participation in an agriculturally-related youth organization such as FFA (Croom, 2008). Under this model, agriculture teachers wear many hats as they must teach agricultural concepts in a classroom or laboratory setting, supervise and help develop student projects, and advise the student organization.

The classroom instruction piece of a complete agricultural education program is “…characterized by learning activities designed by an agriculture teacher and presented to students using formal instruction methods such as lecture, demonstration, guided and

independent practice, review, and assessment" (Croom, 2008, p. 110). Rosenshine and Furst (1971) discovered common behavioral characteristics of teachers who exhibited effective classroom instruction including clarity, variability, enthusiasm, task-oriented and/or businesslike behavior, student opportunity to learn the criterion material, use of student ideas and general indirectness, criticism, use of structuring components, types of questions, probing, and level of difficulty of instruction (p. 44-54). Similarly, Roberts and Dyer (2004) determined 40 different characteristics of effective teachers, seven of which panelists reached a unanimous consensus (100%) on including: cares for students, effectively plans for instruction, is honest, moral, and ethical, has a sound knowledge of FFA, actively advises the FFA chapter, and effectively prepares students for CDEs and other FFA activities, communicates well with others, effectively manages, maintains, and improves laboratories, and effectively recognizes achievements.

According to Jenkins III (2008), "Quality instruction has been identified as a list of characteristics for teachers to practice, an understanding of teaching and learning, and based on the curriculum utilized," (p. 21). Talbert, Vaughn, Croom, and Lee (2007) state that the ideal model for agricultural education requires the integration of classroom instruction, supervised agricultural experience, and FFA. Croom (2008) explained that the need to link together instruction with SAEs and FFA can be traced back to the Smith-Hughes Act of 1917. It was emphasized that no one piece of the puzzle should overpower another but, instead, should all contribute equally toward one interdependent unit.

Stimson (1919) purported that skills and abilities are not learned simply through reading books, observation, and memorization, but also requires active participation in experiences during the learning period. Dewey (1938), however, warned that "The belief that all genuine education comes about through experience does not mean that all experiences are genuinely or equally educative" (p. 25). Since the early days of the Smith-Hughes Act which required the integration of farm projects into all agricultural education programs (Moore, 1988), the farm project method has evolved over the years to become what we now refer to as SAEs or Supervised Agricultural Experiences (Camp, Clarke, & Fallon, 2000). Supervised Agricultural Experience is characterized as "the application of the concepts and principles learned in the agricultural education classroom in planned, real-life settings under the supervision of the agriculture teacher" (Talbert et. al., 2007, p. 418). Secondary agricultural educators continue to implement genuine and educative experiential learning into their programs through the use of these Supervised Agricultural Experiences (Newcomb, McCracken, Warmbrod, & Whittington, 2004).

The third and final piece of the quintessential agricultural education program is student participation in an agricultural youth organization (Phipps & Osborne, 1988). This agricultural youth organization, known specifically to the profession as the National FFA Organization, is another tool of instruction used in order to compliment "…both instruction and supervised agricultural experience" (Croom, 2008, p. 110). Formerly known as the Future Farmers of America, the FFA helps to relate classroom learning to real world experiences through leadership development, personal growth, and career

success, thereby making the learning relevant to students (Jones, 2013). Unlike most other student organizations which operate mainly outside of school time and outside of the classroom, FFA is intracurricular to the agricultural science program meaning that not only is it acceptable for teachers to include FFA in their classrooms, but it is actually required by law (Talbert, et. al., 2007; National FFA Organization, 2015a).

Teacher Attrition

The field of agricultural education has been plagued with the issue of supply and demand of agriculture teachers over the past decade. The demand for teachers to fill vacant positions is high, yet we are seeing a decrease in the number of newly qualified teachers (Kantrovich, 2010). Because of this increase in demand, many agriculture programs are hiring teachers who are either not highly qualified or who are coming from outside of the agricultural education field (Kantrovich, 2010). A recent study conducted by Foster, Lawver, and Smith (2014) found that there was a substantial growth in school based agricultural education programs in the year 2014-2015, but there are not enough newly qualified teachers entering the profession to fill those newly created positions.

This growth in the number of agricultural education programs and the number of students in those programs has been a contributing factor to the teacher shortage, yet Ingersoll (2003) believes that the main battle to be fought in this war on teacher attrition is that of teacher turnover. Ingersoll (2003) also found that the majority of teacher turnover occurs within the first five years of an agricultural educator's career. Fulton, Yoon, and Lee (2005) state that there is a need for a strong start with good support for these early career teachers because school culture and professional working conditions

are always high on the list of reasons why teachers leave the profession. This researcher substantiates Ingersoll (2003) which states "Almost one out of every two new teachers has left the classroom by the end of the fifth year," (Fulton, Yoon, & Lee, 2005).

Sorensen and McKim (2014) found a positive correlation between level of work-life balance ability, job satisfaction, and professional commitment. One interpretation of this correlation might be that if a teacher reports a high level of work-life balance ability, they are more likely to report higher levels of job satisfaction and remain in the teaching field longer. Swan, Wolf, & Cano (2011) proposed that if the profession is to overcome the teacher shortage, highly qualified teachers with a high level of self-efficacy are needed. Chapman (1984) suggested a model of the influences associated with teacher attrition as seen in Figure 2.

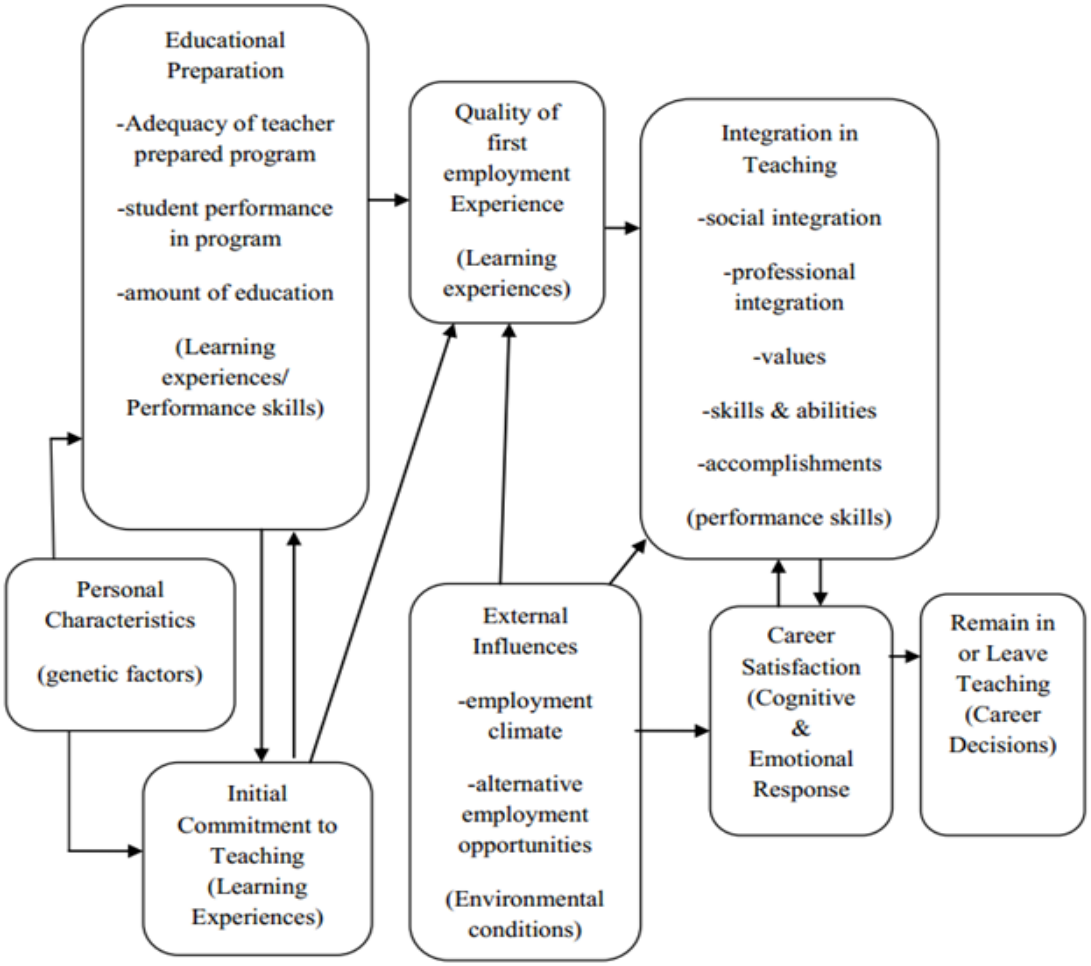

Figure 2: A suggested model of the influences associated with teacher attrition as discussed in *Teacher Retention: The test of a model* by D. Chapman, 1984, p. 646.*

This suggested model of teacher retention describes the different influences a teacher may encounter throughout their teaching experience which may possibly impact a teacher's decision to either remain in or leave the teaching profession. These

* Reprinted with permission from "Teacher Retention: The test of a model" by D. Chapman, 1984. *American Educational Research Journal,* p. 646, Copyright 1984 by American Educational Research Association.

influences include the following: personal characteristics, educational preparation, initial commitment to teaching, quality of first employment, external influences, integration in teaching, and career satisfaction (Chapman, 1984). This tested model gives the profession a visual idea of which factors throughout a teacher's career may influence them to leave the profession. This model points out that the adequacy of a teacher's preparation program will also play into their decision to stay or go (Chapman, 1984). Teacher preparation programs can use this model to recognize the importance of their role in the career of a new teacher.

Problems of Early Career Teachers

Because of the extensive amount of work an agriculture teacher is tasked with, teachers, especially early in their careers, risk becoming overwhelmed and may experience a type of reality shock in the transition from student teacher to full-time teacher (Veenman, 1984). A case study was conducted by Talbert, Camp, and Heath-Camp (1994) of three early career agriculture teachers working in southeastern states. The participants included two females between the ages of 25-29, one of which was traditionally certified and the other alternatively certified, and one traditionally certified male between the ages of 20-25. Although each teacher had different experiences, all had issues with student discipline and isolation from co-workers. Other problems faced by these teachers included time management, lesson planning, and classroom/laboratory management. This study concluded that a system of induction assistance for early career teachers is needed to avoid losing promising teachers due to traumatic experiences in the first years (Talbert, Camp, & Heath-Camp, 1994).

By the same token, Myers, Dyer, and Washburn (2005) conducted a study of 41 beginning middle and/or high school agriculture teachers in Florida and identified 11 major issues facing these early career agriculture teachers. Using a series of three questionnaires, the Delphi method was utilized to conduct this research; the first round consisted of the open-ended question "What are the major problems faced by beginning teachers of agriculture?" Respondents were required to rate statements taken from the first round on their level of agreement and a consensus was reached in the third and final round of the study. The top five problems included organizing FFA chapter events and activities, managing student discipline in the classroom, organizing effective alumni chapters, organizing effective advisory committees, and recruiting and retaining alumni members (Myers et. al, 2005).

Time management has been noted as a recurring and common problem reported by early career teachers. According to Murray, Flowers, Croom, and Wilson (2011), "The time required for teachers to establish a complete agricultural education program including classroom, FFA, and SAE, typically involves longer than a forty hour work week" (p. 107). Concurrently, a study conducted by Lambert, Henry, and Tummons (2011) reported that every teacher who participated in the study admitted to working well over a 40 hour work week, every week. The researchers found that time was a scarce resource among these early career teachers, and there was a reported discrepancy between how the teachers would like to spend their time versus how they were actually spending it (Lambert et. al., 2011).

Mundt and Connors (1999) surveyed 54 award winning agriculture teachers and compiled a list of problems and challenges associated with the first years of teaching as agreed upon by the panel of experts—eight of which were rated very important. These problems and challenges included: managing the overall activities of the local FFA chapter, building the support of faculty, counselors and administrators within the school system, using proper classroom management strategies and dealing with student discipline problems, properly managing your time, completing paper work and meeting required deadlines, building support from parents, organizations, and adult groups within the community, and organizing and managing safe and attractive facilities. Three out of the eight aforementioned problems and challenges were associated with time management (Mundt & Connors, 1999). Boone and Boone (2009) also found that time management was a problem for beginning teachers as well as salary and balancing school and home activities.

Compared to other secondary education teachers, agriculture teachers usually have a greater workload and work longer hours (Torres, Ulmer, & Aschenbrener, 2007). In this study of workload distribution, student teachers, first-year teachers, and experienced teachers did not equally distribute their time amongst all facets of the agricultural education program, but spent a large majority of their time in the combined areas of planning and instruction (Torres et. al., 2007). Murray et. al. (2011) described the frequency with which agriculture teachers experienced difficulty in balancing career and family as alarming and concerning to the profession. This study echoes that of Edwards and Briers (1999) which describes managing time efficiently and balancing

quality time among different life roles as challenging to early career agriculture teachers. Long hours and large workloads have been shown to contribute to teacher attrition and/or individuals choosing not to enter the field at all (Knight & Bender, 1978; Mattox, 1974; Moore & Camp, 1979).

Teacher Preparation and In-service Needs

The growing shortage of qualified teachers to fill the large number of vacant agriculture teaching positions has fueled researchers' desire to discover ways in which to combat issues faced by early career agriculture teachers in order increase teacher retention rates and the number of students pursuing careers in agricultural education. Garton and Chung (1996) conducted a study over the in-service needs of early career agriculture teachers in the state of Missouri. The researchers recommended a higher need for in-service education in the fields of instruction, program planning, development and evaluation, and program administration, and stated that traditional methods of in-service delivery such as 2-3 hour workshops and district in-service courses were preferred.

Layfield and Dobbins (2002) compared the reported in-service needs of experienced agriculture teachers with early career teachers in South Carolina. The competencies of experienced teachers varied with early career teachers, especially in terms of using multimedia equipment and computers in classroom teaching. Early career teachers reported an in-service need for preparing FFA teams for contests, developing supervised agricultural experiences for students, and developing adult education programs and advisory committees (Layfield & Dobbins, 2002).

Joerger and Boettcher (2000) found that pre-service teachers would benefit greatly by discussions and exercises that allow them to practice specific skills needed when teaching. It was suggested that preparation programs teach their pre-service teachers skills such as enlisting the support of parents, selecting and obtaining useful and up-to-date instructional materials, how to make the best use of their time, and how to effectively interact and receive timely feedback from their principals. Furthermore, it was proposed that teacher preparation and in-service programs might assist pre-service teachers in developing strategies for implementing supervised agriculture programs and FFA chapters in order to secure the cooperation and support of the parents.

Stair, Warner, and Moore (2012) compared the pre-service and in-service concerns of three distinct groups of current and former agricultural education majors at North Carolina State University: introductory level students enrolled in their introduction to teaching agriculture course, advanced students in the methods of teaching agriculture course, and program graduates who had just finished their first year of teaching agriculture and were about to begin their second. The researchers determined that, between these three stages in the development of an agriculture teacher, there is a definite shift in the types of concerns these individuals experience over time. The pre-service teachers were found to be more concerned with the areas of non-teaching, self, and task, while the in-service teachers placed much more concern in having a higher-level of impact.

The first year teachers also reported the highest number of concerns overall when compared to the pre-service groups. The researchers recommended providing pre-service

teachers with educational experiences earlier in their college careers to address their lower level self and impact concerns. Because of the impact and task concerns of the early career teachers, it was suggested that there is a need for in-service workshops and professional development focusing on the "survival skills" necessary for working in a school setting (Stair, Warner, & Moore, 2012).

Summary of Literature Review

Agricultural education in public schools has come a long way since 1917 as it is no longer simply about "…plows, cows, and sows…" (Conroy, 2004). Students involved in the National FFA Organization are no longer solely being trained for a career as a farmer or rancher, but are being influenced to develop premier leadership, personal growth, and career success, in any field, through agricultural education (National FFA Organization, 2015b). Agricultural education helps students develop these skills, yet the field is facing a major teacher shortage (Kantrovich, 2010). The number of agricultural education programs and students involved in those programs is increasing continuously each year, but highly qualified teachers are not being produced at the same rate to match the increase in demand (Foster, Lawver, and Smith, 2014). Chapman (1984) suggested a model of influences associated with teacher attrition which lists adequacy of the teacher preparation program as a factor in a teacher's decision to stay in or leave the teaching profession. This model emphasizes the important role that the teacher preparation program plays in that decision.

Early career teachers also face many different problems such as long hours and large workloads which may also influence a teacher's decision to leave the profession

(Knight & Bender, 1978; Mattox, 1974; Moore & Camp, 1979). Time management as well as other problems such as classroom management, salary, and work-life balance has been proven to be a consistent problems among early career agriculture teachers (Boone & Boone, 2009; Edwards & Briers, 1999; Lambert et. al., 2011; Mundt & Connors, 1999; Murray et. al., 2011; Myers et. al., 2005; Torres et. al., 2007). Due to these problems, many studies have been conducted in order to determine the needs of teacher preparation and in-service programs such as workshops covering program planning, enlisting parent support, finding materials, time management, and survival skills (Garton & Chung, 1996; Joerger & Boettcher, 2000; Layfield & Dobbins, 2002; Stair et. al., 2012).

CHAPTER III

METHODOLOGY

Research Design

The purpose of this study was to describe specific experiences award winning early career agriculture teachers throughout the Unites States would have liked to have had prior to acquiring an agriculture teaching position. According to Fraenkel and Wallen (2009), the obstacles that accompany descriptive research include making sure that the survey questions are easily understandable, getting the respondents to answer truthfully and to the best of their ability, and getting a sufficient amount of questionnaires completed in order to make the research valid and complete. Reported experiences needed to prepare early career agriculture teachers were identified as the dependent variable for this study. In order to collect data for this study, a modified Delphi method was implemented utilizing three rounds of researcher-developed questionnaires following the Tailored Design Method (Dillman, Smyth, & Christian, 2009) as a guide for distribution.

The Delphi method is noted to be highly effective at obtaining a consensus among a sample group of purposively selected individuals (Stufflebeam, McCormick, Binkerhoff, & Nelson, 1985). Round one of the series of questionnaires included open-ended and demographic-type questions. The questionnaires from rounds two and three were constructed using panelists' answers from the previous rounds and were built using Likert-type five-point rating scales designed to reach a level of agreement which was set *a priori* by the researchers.

Subject Selection

The subjects of this study included agriculture teachers throughout the United States who had received the National Association of Agricultural Educators Outstanding Young Member award in the year 2010-2014. When selecting a panel of experts to utilize in a Delphi study, it is important that the panelists be representative of their profession, unlikely to be challenged as experts in their field, and have the power to implement the findings of the study (Delbecq, Van de Ven, & Guftafson, 1975; Duffield, 1993; Fink, Kosecoff, Chassin, & Brook, 1991). The Outstanding Young Member award is given to NAAE members as a means of encouraging young teachers to remain in the profession and to encourage and recognize their participation in professional activities (National Association of Agricultural Educators, 2015). The members of this panel were rated as either "Good" or "Excellent" in multiple categories including instruction, teaching philosophy, experiential learning, student organizations, partnerships, marketing, and professional growth. A census of all individuals meeting these criteria was taken for this study. Potential subjects were identified using the publicly available list of 2010-2014 Outstanding Young Member award winners listed online by the National Association of Agricultural Educators organization.

An initial email was sent out to all teachers on the list to solicit response from individuals who were willing to participate in the study. These participants were chosen based on the criteria that they are currently or have previously been a secondary agriculture teacher and were selected as an Outstanding Young Member by the National Association of Agricultural Educators in the year 2010-2014. The researchers

determined that individuals meeting these criteria would have the expertise necessary to understand what is needed in agricultural teacher preparation programs and teacher in-service programs. According to Fraenkel and Wallen (2009), purposive sampling utilizes the researcher's judgment to select a sample based off prior information that they believe will produce data needed, but caution must be taken in this type of sampling due to the possibility of error in judgment on the part of the researcher. A total of $N = 29$ Outstanding Young Member award winners were identified for this study. Round one achieved a response rate of 79.3% ($n = 23$). Of the 23 respondents in round one, 100% completed the questionnaire in round two ($n = 23$) and 95.6% responded in round three ($n = 22$).

Instrumentation

This study utilized a modified Delphi method in order to solicit responses. Delp, Thesen, Motiwalla, and Seshadri (1977) explained the Delphi technique to be a group process designed to solicit responses from purposively selected experts in a given field in order to reach an agreed upon consensus on a particular topic or issue. The instrument used in this study consisted of three rounds of electronic questionnaires. Expert faculty members in agricultural education at Texas A&M University established content and face validity for the initial instrument used in this study. A group size of at least 12 to 15 panelists has been recommended in order to achieve reliability and a correlation coefficient of .90 (Dalkey, Rourke, Lewis, & Snyder, 1972). The 29 initial panelists chosen to participate in this study contributed to the reliability of this multiple round, modified Delphi study.

Round One

Round one of the study began with a pre-notice email to all panel members in order to solicit participation in the study. The first questionnaire was sent three days later via Qualtrics™, a web-based online survey system (Appendix A). The round one questionnaire included nine demographic-type questions related to the personal and professional characteristics of the panel of experts including: age, sex, number of teachers in the agricultural education program, size of the school, number of years teaching, number of different programs taught at, highest degree obtained, and type of certification received. The panel was also asked five open-ended questions including:

1. "What led you to pursue a career in agricultural education?"
2. "In terms of your teacher preparation program, what aspects of teaching agriculture did you feel most prepared for?"
3. "In terms of your teacher preparation program, what aspects of teaching agriculture did you feel least prepared for?"
4. "What would you have liked to have known more about before becoming an agriculture teacher?"
5. "What does your agricultural education program participate in the most? (Ex: Livestock Shows, CDEs, FFA Chapter Activities)."

The panelists' responses from round one were analyzed, all like items were collapsed, and the statements were sent back to the expert panels for the second round.

Round Two

The round two questionnaire was developed based on the panel members' responses from round one. Participants in this round were asked to rank their level of agreement for each statement on a five-point scale (1 = Strongly Disagree; 2 = Disagree; 3 = Uncertain; 4 = Agree; 5 = Strongly Agree). Panelists were given the opportunity to expand their answers, provide clarity, or suggest revisions at the end of each question. The researchers established *a priori* that any item receiving a mean score of 3.75 or greater would be considered to have reached a level of consensus (i.e., ≥ 75% of the panelists indicated "Agree" or "Strongly Agree") and therefore would not need to be included in the third and final questionnaire (Buriak & Shinn, 1989; Ramsey & Edwards, 2011).

Round Three

During round three, participants were asked to rate their level of agreement with those items that had failed to reach a level of consensus (i.e., ≥ 75% of the panelists indicated "Agree" or "Strongly Agree") in round two. In accordance with Dalkey, et. al. (1972), only a slight increase in "consensus of agreement" among the panel of experts was expected compared to the responses reported in round two. All items that failed to reach a mean score of $M = 3.75$ were dropped from the final list of agreed upon experiences needed to prepare early career agriculture teachers. The instruments from rounds one, two, and three can be found in Appendix A, B, and C respectively.

Data Collection

The tailored design method described by Dillman, Smyth, and Christian (2009) was followed by the researchers in order to efficiently and properly collect data for this study. Five points of contact were utilized for each round of this modified Delphi study. Respondents were sent an initial recruitment email via Qualtrics™, an online survey system, asking for their willingness to participate and describing the methods and procedures of the study. Three days after the panelists were sent the pre-notice email, a second personalized email was sent to the participants containing the link for the first questionnaire. Follow-up reminder emails were sent once a week for three weeks after the link was sent in order to encourage responses. Dillman, Smyth, and Christian (2009) recommended making multiple contacts to participants, to vary the messages in each email, and to personalize the message by avoiding bulk emails and using the individual's first and last name.

After responses from round one were received and like items were combined, the second round questionnaire was developed and required the panel to rate their level of agreement of each item using a Likert-type scale. Two weeks after the conclusion of round one, the panelists were sent a personalized email containing the link to the second round questionnaire. Follow up reminder emails were sent in accordance with Dillman et. al. (2009). At the completion of round two, responses were analyzed and items that did not reach consensus in round two were retained and included in the third round questionnaire. One week after the conclusion of the second round, the panel of experts received a personalized email which included the link to the third and final

questionnaire. Non-respondents received follow up reminder emails to encourage responses. At the conclusion of the final round, participants were sent an email via Qualtrics™ expressing the gratitude of the researchers for participating in the study.

CHAPTER IV

RESULTS

Introduction

The purpose of this study was to describe specific experiences early career agriculture teacher award winners would have liked to have had prior to acquiring an agriculture teaching position. The findings of this study are presented based off of the research objectives detailed in Chapter One. Descriptive statistics were calculated in order to report the findings of these objectives. The research objectives of this study were as follows:

1. Identify the characteristics of early career agriculture teacher Outstanding Young Member award winners from 2010-2014 in the United States including age, sex, number of teachers in their agricultural education program, size of the school, number of years teaching, number of different programs taught at, highest degree obtained, and type of certification.
2. Compile a list of common factors associated with influencing these Outstanding Young Member award winners to pursue a career in agricultural education.
3. Discover which aspects of teaching agriculture early career teacher award winners were most prepared for by their teacher preparation program.
4. Discover which aspects of teaching agriculture early career teacher award winners were least prepared for by their teacher preparation program.
5. Compile a list of experiences, agreed upon by a panel of experts, needed to prepare early career agriculture teachers.

Objective 1: Identify the Characteristics of Early Career Agriculture Teacher Outstanding Young Member Award Winners

Demographic-type data were collected in the first round of this three-round modified Delphi study from the panel of experts via the online survey system, Qualtrics™. Frequencies and percentages were calculated for each demographic variable including age, sex, highest degree obtained, number of agriculture teachers in their current program, number of students in the school where the teacher was currently employed, means of teacher certification, number of years teaching agriculture classes that they had completed, racial/ethnic heritage, and the number of schools in which the teachers had been employed at as an agriculture teacher. Frequencies and percentages were also calculated describing which of the Agriculture, Food, and Natural Resources pathways teachers offered through the classes they taught.

Most of the respondents in this modified Delphi study were between 26-30 years of age (n = 11) or 31-35 years of age (n = 10). Considering that most of these teachers received the Outstanding Young Member award within their third, fourth, or fifth year of teaching, these findings are consistent with the assumptions made by the researchers that the panelists might be close in age to one another. A majority of the participants were female (n = 19) and had received a Master's degree (n = 14). The reported number of agriculture teachers in each program varied from one to five or more. Many of the respondents reported being either the sole agriculture teacher in their program (n = 7) or working in a two-teacher department (n = 9). Coincidentally, 34.9% (n = 8) of respondents reported working at a school with less than 500 students, and 30.4% (n = 7)

stated that they were employed at a school where the number of students fell somewhere in the range of 500 to 999. Out of the 23 total participants in this study, 91.3% (*n* = 21) received their teaching certification through a traditional teacher preparation program. Since receiving the Outstanding Young Member award as an early career teacher, 91.3% (*n* = 21) of the teachers comprising the panel of experts have taught at least five years, some even teaching for as long as 10 years. Although many of these teachers had stayed in the profession long enough to be able to follow a class of freshmen through to their senior year, a majority of the respondents (n = 13) reported teaching at two or more schools since becoming an agriculture teacher. A complete overview of these teacher characteristics is presented in Table 1.

Table 1

Demographic Variables. Selected Teacher Characteristics (n = 23)

Demographic Variables	*f*	*%*
Age		
26-30	11	47.80
31-35	10	43.50
36-40	2	8.70
Sex		
Male	4	17.40
Female	19	82.60
Highest Degree Obtained		
Bachelor's	7	30.40
Master's	14	61.00
Educational Specialist	0	0.00
Doctoral	1	4.30
Other	1	4.30

Table 1. Continued

Demographic Variables	*f*	*%*
Number of Agriculture Teachers in Current Program		
1	7	30.40
2	9	39.10
3	4	17.40
4	1	4.30
5 or more	2	8.70
Number of Students in School		
<500	8	34.90
500-999	7	30.40
1,000-1,499	3	13.00
1,500-2,000	3	13.00
>2,000	2	8.70
Means of Teacher Certification		
Traditionally Certified	21	91.30
Alternatively Certified	2	8.70
Years of Teaching Agriculture Completed		
1-2	0	0.00
3-4	2	8.70
5-6	9	39.10
7-8	6	26.10
9-10	6	26.10
Racial/Ethnic Heritage		
Non-Hispanic White	22	95.70
Black, Afro-Caribbean, or African America	0	0.00
Latino or Hispanic American	1	4.30
East Asian or Asian American	0	0.00
South Asian or Indian American	0	0.00
Middle Eastern or Arab American	0	0.00
Native American or Alaskan Native	0	0.00
Other	0	0.00
Number of Schools Taught at as an Agriculture Teacher		
1	10	43.50
2	10	43.50
3	2	8.70
4	1	4.30

As stated previously, 56.5% (*n* = 13) of the panelists admitted to teaching in at least two or more different schools since becoming an agriculture teacher. Out of the 23 panelist members, 43.5% (*n* = 10) reported that they had taught at two different schools since becoming an agriculture teacher as seen in Table 2. Out of those individuals (*n* = 10), a majority (*n* = 7; 70.0%) of the respondents stayed at their first school a maximum of four years, and 70.0% (n = 7) has been teaching at their second school for a longer period of time: between five and eight years.

Table 2

Demographic Variables. Years Taught at Two Schools (n = 10)

Two Schools	*f*	%
Years Taught at School 1		
<1	1	10.00
1-2	3	30.00
3-4	3	30.00
5-6	2	20.00
7-8	1	10.00
Years Taught at School 2		
<1	0	0.00
1-2	2	20.00
3-4	1	10.00
5-6	3	30.00
7-8	4	40.00

Of the 23 panelists in this study, 8.7% (*n* = 2) reported that they had taught at three different schools since becoming an agriculture teacher as seen in Table 3. Both panelists (n = 2) reported staying at their first school a maximum of two years and

staying at their second school between one and four years. These individuals reported that they have been employed at their third school between one and four years.

Table 3

Demographic Variables. Years Taught at Three Schools (n = 2)

Three Schools	*f*	*%*
Years Taught at School 1		
<1	1	50.00
1-2	1	50.00
3-4	0	0.00
5-6	0	0.00
7-8	0	0.00
Years Taught at School 2		
<1	0	0.00
1-2	1	50.00
3-4	1	50.00
5-6	0	0.00
7-8	0	0.00
Years Taught at School 3		
<1	0	0.00
1-2	1	50.00
3-4	1	50.00
5-6	0	0.00
7-8	0	0.00

One panelist out of 23 (4.3%) reported that they had taught at four different schools since becoming an agriculture teacher as seen in Table 4. This panelist reported leaving their first school of employment after less than one year. They remained at their second school a short amount of time as well, between one and two years. The panelist was employed by their third school for three to four years, and has been at their fourth school for less than one year.

Table 4

Demographic Variables. Years Taught at Four Schools (n = 1)

Four Schools	*f*	%
Years Taught at School 1		
<1	1	100.00
1-2	0	0.00
3-4	0	0.00
5-6	0	0.00
7-8	0	0.00
Years Taught at School 2		
<1	0	0.00
1-2	1	100.00
3-4	0	0.00
5-6	0	0.00
7-8	0	0.00
Years Taught at School 3		
<1	0	0.00
1-2	0	0.00
3-4	1	100.00
5-6	0	0.00
7-8	0	0.00
Years Taught at School 4		
<1	1	100.00
1-2	0	0.00
3-4	0	0.00
5-6	0	0.00
7-8	0	0.00

The panelists were asked to report in which pathways they offered classes throughout their agriculture education program as seen in Table 5. A majority (65%; *n* = 15) of respondents reported teaching classes in both the Animals Systems pathway and the Plant Systems pathway. Twelve panelists (52.2%) taught classes in the Comprehensive Systems pathway which includes the introductory class, Principles of Agriculture, Food, and Natural Resources. Natural Resource Systems was also another

pathway that was frequently reported amongst panelists (56.5%) as well as the Power, Structural, and Technical Systems pathway (52.2%).

Table 5

AFNR Pathways Taught (n = 23)

Pathways Taught	*f*	*%*
AFNR Pathway Representing Classes Taught		
Agribusiness Systems	11	47.80
Animal Systems	15	65.20
Biotechnology Systems	4	17.40
Comprehensive Systems	12	52.20
Environmental Service Systems	4	17.40
Food Products and Processing Systems	5	21.70
Natural Resource Systems	13	56.50
Plant Systems	15	65.20
Power, Structural, and Technical Systems	12	52.20

Objective 2: Compile a List of Factors Associated with Influencing Outstanding Young Member Award Winners to Pursue a Career in Agricultural Education

In the first round of this modified Delphi study, panel members were asked the question "What led you to pursue a career in agricultural education?" Respondents produced a list of 58 statements ranging from "Grew up on a farm" to "Influenced by agriculture teacher" to "Being passionate about the agriculture industry". The researchers separated compound statements and categorized like items (Linstone & Turoff, 2002) to produce 12 different categories. Nine respondents (39.1%) reported that having a passion for agriculture which influenced their decision to teach agriculture. Seven individuals (30.4%) reported being influenced by their positive experiences in

FFA and 4-H. Similarly seven panelists (30.4%) reported that their positive experiences in their high school agriculture program helped lead them to become an agriculture teacher. Only 17.4% (n = 4) of panelists reported that growing up on a farm influenced their career decisions. Table 6 provides a full list of these categories along with the calculated frequencies and percentages of each item.

Table 6

Factors Associated with Influencing OYM Award Winners to Pursue a Career in Agricultural Education (n = 23)

Factors Associated with Pursuing AGED Career	*f*	*%*
Passion for agriculture	9	39.10
Making a difference in the lives of students	7	30.40
Positive experiences in FFA and 4-H	7	30.40
Positive experience in high school Ag. program	7	30.40
Different path initially-Ag. teacher by chance then choice	6	26.10
Influenced by agriculture teacher	6	26.10
Grew up on a farm	4	17.40
Influenced by past family involvement in Ag. program	4	17.40
Parent employed in education	3	13.00
State FFA officer	3	13.00
Best career for a mom to stay tied to agriculture	1	4.30
Opportunities to teach agriculture in college	1	4.30

Objective 3: Discover Which Aspects of Teaching Agriculture Early Career Teacher Award Winners Were Most Prepared for by their Teacher Preparation Program

Round One

The 47 statements provided by the Outstanding Young Member award winners who comprised the panel of experts from round one ranged from "Developing Curriculum" to "Classroom Management" to "Foundational Skills of Teaching". The total number of statements categorized by construct was as follows: Content Knowledge, 13; Classroom Instruction, 12; Developing Curriculum/Lesson Planning, 11; Other, 7; and Classroom Management, 4. A raw, detailed list of all initial statements collected after round one can be found in Appendix G. After the researchers analyzed each statement, combined like and duplicate items, and separated compound statements (Linstone & Turoff, 2002), 18 statements were retained for presentation to the panelists in round two.

Round Two

In round two, the panel members were asked to rate their level of agreement on the 18 statements established after analyzing and combining like items from round one. Participants were asked to rank their level of agreement for each of the 18 items on a five-point scale (1 = Strongly Disagree; 2 = Disagree; 3 = Uncertain; 4 = Agree; 5 = Strongly Agree). In total, four of the 18 items reached the "consensus of agreement" (i.e. ≥ 75% indicated "Agree" or "Strongly Agree") established *a priori*. The aspects of teaching agriculture that Outstanding Young Member award winners were reportedly

most prepared for by their teacher preparation program which reached consensus include Teaching Animal Science, Classroom instruction, Introductory lessons/units, and Developing curriculum (Writing lesson plans). These items and their means are listed in Table 7.

Table 7

Aspects of Teaching Agriculture OYM Award Winners Were Most Prepared for that Reached a Consensus after Two Rounds of the Study (n = 23)

Factors Most Prepared For	*Mean*
Teaching Animal Science	4.17
Classroom instruction	3.96
Introductory lessons/units	3.87
Developing curriculum (Writing lesson plans)	3.78

Note: Scale: "1" = "Strongly Disagree," "2" = "Disagree," "3" = "Neither Agree nor Disagree," "4" = "Agree," "5" = "Strongly Agree."

Out of the 18 items presented to the panelists in round two, 14 items failed to reach a consensus of agreement. These items included: Teaching FFA, Differentiated instruction, Networking, Classroom management, Basic agricultural mechanics, Teaching multicultural students, Teaching high-level concepts, Understanding the complexities of being an agriculture teacher, Inquiry-based learning, Teaching horticulture, Time management in and out of the classroom, Completing duties that take place outside of class time, Teaching Forestry, and Teaching Wildlife. Each of the items that failed to reach consensus in round two are listed in Table 8.

Table 8

Aspects of Teaching Agriculture OYM Award Winners Were Most Prepared for that Failed to Reach a Consensus after Two Rounds of the Study (n = 23)

Factors Most Prepared For	*Mean*
Teaching FFA	3.61
Differentiated instruction	3.43
Networking	3.43
Classroom management	3.22
Basic agricultural mechanics	3.09
Teaching multicultural students	2.87
Teaching high-level concepts	2.83
Understanding complexities of being an agriculture teacher	2.83
Inquiry-based learning	2.78
Teaching Horticulture	2.78
Time management in and out of classroom	2.65
Completing duties that take place outside class time	2.52
Teaching Forestry	2.30
Teaching Wildlife	2.30

Note: Scale: "1" = "Strongly Disagree," "2" = "Disagree," "3" = "Neither Agree nor Disagree," "4" = "Agree," "5" = "Strongly Agree."

Round Three

In round three, the panelists were asked to rate their level of agreement on the 14 items that failed to reach the established "consensus of agreement" (i.e. ≥ 75% indicated "Agree" or "Strongly Agree") in round two. Only one more item reached consensus after the third round (Table 9).

Table 9

Aspects of Teaching Agriculture OYM Award Winners Were Most Prepared for that Reached a Consensus after Three Rounds of the Study (n = 23)

Factors Most Prepared For	*Mean*
Teaching FFA	4.14

Note: Scale: "1" = "Strongly Disagree," "2" = "Disagree," "3" = "Neither Agree nor Disagree," "4" = "Agree," "5" = "Strongly Agree."

The 13 aspects of teaching agriculture that OYM award winners were most prepared for that failed to reach a consensus after all three rounds of the study are included in Table 10.

Table 10

Aspects of Teaching Agriculture OYM Award Winners Were Most Prepared for that Failed to Reach a Consensus after Three Rounds of the Study (n = 23)

Factors Most Prepared For	*Mean*
Networking	3.55
Differentiated instruction	3.50
Classroom management	3.32
Teaching high-level concepts	3.32
Teaching Horticulture	3.18
Basic agricultural mechanics	3.09
Teaching multicultural student	2.86
Understanding complexities of being an agriculture teacher	2.86
Completing duties that take place outside class time	2.82
Inquiry-based learning	2.55
Teaching Wildlife	2.55
Time management in and out of classroom	2.50
Teaching Forestry	2.41

Note: Scale: "1" = "Strongly Disagree," "2" = "Disagree," "3" = "Neither Agree nor Disagree," "4" = "Agree," "5" = "Strongly Agree."

After three rounds of this modified Delphi study, five total items reached consensus (M = 3.75 or higher) of agreement (Table 11).

Table 11

Aspects of Teaching Agriculture OYM Award Winners Were Most Prepared for that Reached Consensus of Agreement during the Study (n = 23)

Factors Most Prepared For	*Mean*
Teaching Animal Science	4.17
Teaching FFA	4.14
Classroom Instruction	3.96
Introductory lessons/units	3.87
Developing curriculum (Writing lesson plans)	3.78

Note: Scale: "1" = "Strongly Disagree," "2" = "Disagree," "3" = "Neither Agree nor Disagree," "4" = "Agree," "5" = "Strongly Agree."

Objective 4: Discover Which Aspects of Teaching Agriculture Early Career Teacher Award Winners were Least Prepared for by their Teacher Preparation Program

Round One

The Outstanding Young Member award winners who comprised the panel of experts for this study provided 56 statements from round one which ranged from "Work-Life Balance" to "Dealing with Administrators" to "Working with Special Needs Students". The total number of statements categorized by construct was as follows: Content Knowledge, 13; Time Management/Work-Life Balance, 8; Classroom Instruction, 7; Classroom Management, 6; Communication (With Parents, Administration, etc.), 6; Job Basics, 6; Paperwork, 5; Handling Diverse Populations, 3;

and Other, 2. A raw, detailed list of all initial statements collected after round one can be found in Appendix G. After the researchers analyzed each statement, combined like and duplicate items, and separated compound statements (Linstone & Turoff, 2002), 35 of the initial 56 statements were retained for presentation to the panelists in round two.

Round Two

In round two, panelists were asked to rate their level of agreement on the 35 statements established after analyzing and combining like items from round one. Participants were asked to rank their level of agreement for each of the 35 items on a five-point scale (1 = Strongly Disagree; 2 = Disagree; 3 = Uncertain; 4 = Agree; 5 = Strongly Agree). In total, two of the 35 items reached the "consensus of agreement" (i.e. ≥ 75% indicated "Agree" or "Strongly Agree") established *a priori*. The aspects of teaching agriculture that OYM award winners were reportedly least prepared for by their teacher preparation program which reached consensus include Planning for retirement and Work-life balance. These items and their means are listed in Table 12.

Table 12

Aspects of Teaching Agriculture OYM Award Winners Were Least Prepared for that Reached a Consensus after Two Rounds of the Study (n = 23)

Factors Least Prepared For	*Mean*
Planning for retirement	4.13
Work-life balance	4.13

Note: Scale: "1" = "Strongly Disagree," "2" = "Disagree," "3" = "Neither Agree nor Disagree," "4" = "Agree," "5" = "Strongly Agree."

Of the 35 items presented to the panelists in round two, 33 items failed to reach a consensus of agreement. These items included: Filling out applications (Ex: Proficiencies and state degrees), Management of equipment, Workload, Dealing with finances, Paperwork, Renewal processes, How reimbursement funding works, Managing a greenhouse, Teaching SAEs, Agricultural mechanics, Recruitment of diverse students, Teacher evaluations (By principals, administrators, etc.), Time management, Communicating with parents, Following approved course outlines (Approved by the school), Managing a chapter with a classroom, Communicating with administration, Following a textbook/approved outline, Management of laboratory area, Career preparation, Communicating with teaching partner(s), Record-keeping, Scheduling lessons, Classroom management, Laboratory courses, Differentiated instruction, Working with special needs students, Importance of marketing the agriculture program, Planning activities for topics taught, Making lessons hands-on, Certification requirements, Teaching methodology, and Teaching FFA. These items and their means are listed in Table 13.

Table 13

Aspects of Teaching Agriculture OYM Award Winners Were Least Prepared for that Failed to Reach a Consensus after Two Rounds of the Study (n = 23)

Factors Least Prepared For	*Mean*
Filling out applications (Ex: proficiencies and state degrees)	3.74
Management of equipment	3.74
Workload	3.74
Dealing with finances	3.70
Paperwork	3.70
Renewal processes	3.70
How reimbursement funding works	3.65
Managing a greenhouse	3.61
Teaching SAEs	3.61
Agricultural mechanics	3.26
Recruitment of diverse students	3.26
Teacher evaluations (By principals, administrators, etc.)	3.22
Time management	3.22
Communicating with parents	3.13
Following approved course outlines (Approved by school)	3.09
Managing a chapter with a classroom	3.09
Communicating with administration	3.04
Following a textbook/approved outline	3.00
Management of laboratory area	3.00
Career preparation	2.96
Communicating with teaching partner(s)	2.96
Record-keeping	2.96
Scheduling lessons	2.96
Classroom management	2.91
Laboratory courses	2.91
Differentiated instruction	2.83
Working with special needs students	2.83
Importance of marketing the agriculture program	2.70
Planning activities for topics taught	2.65
Making lessons hands-on	2.43
Certification requirements	2.39
Teaching methodology	2.35
Teaching FFA	2.35

Note: Scale: "1" = "Strongly Disagree," "2" = "Disagree," "3" = "Neither Agree nor Disagree," "4" = "Agree," "5" = "Strongly Agree."

Round Three

In round three, the panelists were asked to rate their level of agreement on the 33 items that failed to reach the established "consensus of agreement" (i.e. ≥ 75% indicated "Agree" or "Strongly Agree") in round two. No new items reached consensus after the third round. The 33 aspects of teaching agriculture that Outstanding Young Member award winners were most prepared for that failed to reach a consensus after all three rounds of the study are included in Table 14.

Table 14

Aspects of Teaching Agriculture OYM Award Winners Were Least Prepared for that Failed to Reach a Consensus after Three Rounds of the Study (n = 23)

Factors Least Prepared For	*Mean*
Managing a greenhouse	3.68
Management of equipment	3.64
Workload	3.64
How reimbursement funding works	3.55
Paperwork	3.45
Agricultural mechanics	3.36
Communicating with parents	3.36
Renewal processes	3.36
Dealing with finances	3.32
Time management	3.32
Communicating with administration	3.27
Filling out applications (Ex: proficiencies and state Degrees)	3.27
Teacher evaluations (By principals, administrators, etc.)	3.27
Following approved course outlines (Approved by school)	3.23
Following a textbook/approved outline	3.09
Laboratory courses	3.09
Teaching SAEs	3.09
Managing a chapter with a classroom	3.05
Communicating with teaching partner(s)	2.95
Recruitment of diverse students	2.95
Management of laboratory area	2.91
Differentiated instruction	2.86

Table 14. Continued

Factors Least Prepared For	*Mean*
Classroom management	2.82
Record-keeping	2.82
Planning activities for topics taught	2.68
Working with special needs students	2.68
Scheduling lessons	2.64
Importance of marketing the agriculture program	2.50
Teaching methodology	2.50
Career preparation	2.41
Certification requirements	2.27
Making lessons hands-on	2.27
Teaching FFA	2.14

Note: Scale: "1" = "Strongly Disagree," "2" = "Disagree," "3" = "Neither Agree nor Disagree," "4" = "Agree," "5" = "Strongly Agree."

After three rounds of this modified Delphi study, two total items reached consensus (M = 3.75 or higher) of agreement (Table 15).

Table 15

Aspects of Teaching Agriculture OYM Award Winners Were Least Prepared for that Reached Consensus of Agreement during the Study (n = 23)

Factors Least Prepared For	*Mean*
Planning for retirement	4.13
Work-life balance	4.13

Note: Scale: "1" = "Strongly Disagree," "2" = "Disagree," "3" = "Neither Agree nor Disagree," "4" = "Agree," "5" = "Strongly Agree."

Objective 5: Compile a List of Experiences, Agreed upon by a Panel of Experts, Needed to Prepare Early Career Agriculture Teachers

Round One

The Outstanding Young Member award winners who comprised the panel of experts for this study provided 50 statements from round one in response to the question "What would you have liked to have known more about before becoming an agriculture teacher?" These statements ranged from "Time Management Strategies" to "Curriculum Development" to "Greenhouse Operations". The total number of given statements categorized by construct was as follows: Work-Life Balance, 11; Communication (With Parents, Administrators, etc.), 10; Content Knowledge, 10; Other, 7; Curriculum Development, 5; Classroom Management, 3; Having a Total Program, 3; and Paperwork, 3. A raw, detailed list of all initial statements collected after round one can be found in Appendix G After the researchers analyzed each statement, combined like and duplicate items, and separated compound statements (Linstone & Turoff, 2002), 32 of the initial 50 statements were retained for presentation to the panelists in round two.

Round Two

In round two, panelists were asked to rate their level of agreement on the 32 statements established after analyzing and combining like items from round one. Participants were asked to rank their level of agreement for each of the 32 items on a five-point scale (1 = Strongly Disagree; 2 = Disagree; 3 = Uncertain; 4 = Agree; 5 = Strongly Agree). In total, two of the 35 items reached the "consensus of agreement" (i.e. ≥ 75% indicated "Agree" or "Strongly Agree") established *a priori*. The experiences

teachers would have liked to have had prior to becoming an agriculture teacher which reached consensus include Work-life balance, Running a total agricultural education program, Level/amount of stress, Time management strategies, Cross-curricular planning, Laboratory management, How different agriculture programs meet requirements, Dealing with administrators, How school districts operate, SAEs, and Working with parents. These items and their means are listed in Table 16.

Table 16

Experiences Teachers would have Liked to have had Prior to Becoming an Agriculture Teacher that Reached Consensus after Two Rounds of the Study (n = 23)

Factors Most Prepared For	*Mean*
Work-life balance	4.43
Running a total agricultural education program	4.22
Level/amount of stress	4.00
Time management strategies	3.96
Cross-curricular planning	3.91
Laboratory management	3.91
How different agriculture programs meet requirements	3.87
Dealing with administrators	3.83
How school districts operate	3.83
SAEs	3.83
Working with parents	3.83

Note: Scale: "1" = "Strongly Disagree," "2" = "Disagree," "3" = "Neither Agree nor Disagree," "4" = "Agree," "5" = "Strongly Agree."

Of the 32 items presented to the panelists in round two, 21 items failed to reach a consensus of agreement. The items failing to reach consensus included Greenhouse operations, Methods of organization, What it takes to have a successful agricultural education program, Proficiency awards, Working with the community, Agricultural

mechanics, Professional organizations and resources available, Paperwork, Classroom management, Small engines, Utilizing prepared materials (Ex: Textbooks/workbooks), Working with other teachers, Myself as a teacher (Teaching identity), Career preparation, Curriculum development, Record-keeping, Meat science, How to follow course outlines, Content delivery, How to keep FFA from overshadowing classroom instruction, and Livestock handling. These items and their means are listed in Table 17.

Table 17

Experiences Teachers would have Liked to have had Prior to Becoming an Agriculture Teacher that Failed to Reach Consensus after Two Rounds of the Study (n = 23)

Factors Most Prepared For	*Mean*
Greenhouse operations	3.74
Methods of organization	3.74
What it takes to have a successful AGED program	3.74
Proficiency awards	3.70
Working with the community	3.70
Agricultural mechanics	3.65
Professional organizations and resources available	3.61
Paperwork	3.57
Classroom management	3.48
Small engines	3.48
Utilizing prepared materials (Ex: textbooks/workbooks)	3.48
Working with other teachers	3.48
Myself as a teacher (Teaching identity)	3.43
Career preparation	3.39
Curriculum development	3.35
Record-keeping	3.35
Meat Science	3.30
How to follow course outlines	3.17
Content Delivery	3.13
How to keep FFA from overshadowing classroom instruction	3.09
Livestock handling	2.91

Note: Scale: "1" = "Strongly Disagree," "2" = "Disagree," "3" = "Neither Agree nor Disagree," "4" = "Agree," "5" = "Strongly Agree."

Round Three

In round three, the panelists were asked to rate their level of agreement on the 21 items that failed to reach the established "consensus of agreement" (i.e. ≥ 75% indicated "Agree" or "Strongly Agree") in round two. Five items reached consensus in round three (Table 18).

Table 18

Experiences Teachers would have Liked to have had Prior to Becoming an Agriculture Teacher that Reached Consensus after Three Rounds of the Study (n = 23)

Factors Most Prepared For	*Mean*
Working with the community	4.14
Greenhouse operations	3.95
Methods of organization	3.95
Agricultural mechanics	3.86
Proficiency awards	3.82

Note: Scale: "1" = "Strongly Disagree," "2" = "Disagree," "3" = "Neither Agree nor Disagree," "4" = "Agree," "5" = "Strongly Agree."

The 16 experiences teachers would have liked to have had prior to becoming an agriculture teacher that failed to reach a consensus after all three rounds of the study are included in Table 19.

Table 19

Experiences Teachers would have Liked to have had Prior to Becoming an Agriculture Teacher that Failed to Reach Consensus after Three Rounds of the Study (n = 23)

Factors Most Prepared For	*Mean*
Meat Science	3.73
Myself as a teacher (Teacher identity)	3.73
What it takes to have a successful AGED program	3.73
Professional organizations and resources available	3.64
Working with other teachers	3.64
Classroom management	3.59
Record-keeping	3.59
Career preparation	3.55
How to keep FFA from overshadowing classroom instruction	3.55
Paperwork	3.55
Curriculum development	3.50
Small engines	3.36
Content delivery	3.32
Livestock handling	3.14
Utilizing prepared materials (Ex: textbooks/workbooks)	3.09
How to follow course outlines	3.05

Note: Scale: "1" = "Strongly Disagree," "2" = "Disagree," "3" = "Neither Agree nor Disagree," "4" = "Agree," "5" = "Strongly Agree."

After three rounds of this modified Delphi study, 16 total experiences teachers would have liked to have had or known more about prior to becoming an agriculture teacher reached consensus (M = 3.75 or higher) of agreement (Table 20).

Table 20

Experiences Teachers would have Liked to have had Prior to Becoming an Agriculture Teacher that Reached Consensus of Agreement during the Study (n = 23)

Factors Most Prepared For	*Mean*
Work-life balance	4.43
Running a total agricultural education program	4.22
Working with the community	4.14
Level/amount of stress	4.00
Time management strategies	3.96
Greenhouse operations	3.95
Methods of organization	3.95
Cross-curricular planning	3.91
Laboratory management	3.91
How different agriculture programs meet requirements	3.87
Agricultural mechanics	3.86
Dealing with administrators	3.83
How school districts operate	3.83
SAEs	3.83
Working with parents	3.83
Proficiency awards	3.82

Note: Scale: "1" = "Strongly Disagree," "2" = "Disagree," "3" = "Neither Agree nor Disagree," "4" = "Agree," "5" = "Strongly Agree."

Summary of Findings

The purpose of this study was to describe specific experiences early career agriculture teacher Outstanding Young Member award winners throughout the Unites States would have liked to have had prior to acquiring an agriculture teaching position. A total of n = 23 Outstanding Young Member award winners across the United States were included in this modified Delphi study. The findings of this study were reported based on the five objectives of this study.

Objective 1

The goal of objective one was to identify the characteristics of early career agriculture teacher outstanding young member award winners. Most of the respondents in this modified Delphi study were between 26-30 years of age (*n* = 11) or 31-35 years of age (*n* = 10). A majority were female (*n* = 19) and had received a Master's degree (*n* = 14). Many of the respondents reported being either the sole agriculture teacher in their program (*n* = 7) or working in a two-teacher department (*n* = 9). Many of the participants reported being employed at a smaller school with 34.9% (*n* = 8) of respondents reportedly working at a school with less than 500 students and 30.4% (*n* = 7) at a school with between 500 and 999 students. Of the 23 total participants in this study, 91.3% (*n* = 21) received their teaching certification through a traditional means. Since receiving the Outstanding Young Member award as an early career teacher, 91.3% (*n* = 21) of the panelists have taught from five to 10 years. A majority of the respondents (n = 13) reported teaching at two or more schools since becoming an agriculture teacher. A majority (65%; *n* = 15) of respondents reported teaching classes in both the Animals Systems pathway and the Plant Systems pathway. Twelve panelists (52.2%) taught classes in the Comprehensive Systems pathway. Finally, the Natural Resource Systems pathway (56.5%) and the Power, Structural, and Technical Systems pathway (52.5%) were also frequently reported.

Objective 2

The goal of objective two was to compile a list of factors associated with influencing Outstanding Young Member award winners to pursue a career in agricultural

education. The 58 statements listed by the panelists in round one of the study were categorized into 12 different categories. These categories included: Passion for agriculture, Making a difference in the lives of students, Positive experiences in FFA and 4-H, Positive experiences in their high school agriculture program, On a different path initially-agriculture teacher by chance and then by choice, Influenced by agriculture teacher, Grew up on a farm, Influenced by past family involvement in an agriculture program, Parent employed in education, State FFA officer, Best career for a mom to stay tied to agriculture, and Opportunities to teach agriculture in college.

Objective 3

The goal of objective three was to discover which aspects of teaching agriculture early career teacher award winners were most prepared for by their teacher preparation program. The panel members provided 47 statements after round one which were analyzed by the researchers and combined into 18 total items to be presented in round two. Panelists reached a "consensus of agreement" (i.e. ≥ 75% indicated "Agree" or "Strongly Agree") on five items after three rounds. Those items included: Teaching Animal Science, Teaching FFA, Classroom instruction, Introductory lessons/units, and Developing curriculum (Writing lesson plans).

Objective 4

The goal of objective four was to discover which aspects of teaching agriculture early career teacher award winners were least prepared for by their teacher preparation program. Panelists listed 56 statements in round one, and after analysis by the researchers, those statements were combined in 35 total items. These items were

presented to the panel members in round two. After three rounds of this modified Delphi study, two items reached the level of agreement (M = 3.75) established *a priori*. Those items included: Planning for retirement and Work-life balance.

Objective 5

The goal of objective five was to compile a list of experiences, agreed upon by a panel of experts, needed to prepare early career agriculture teachers. In round one, panelists were asked the question "What would you have liked to have known more about before becoming an agriculture teacher?" Panel members provided 50 statements after round one, and after the researchers analyzed each statement, combined like and duplicate items, and separated compound statements (Linstone & Turoff, 2002), 32 of the initial 50 statements were retained for presentation to the panelists in round two. After three rounds of the study, 16 total items reached consensus (M = 3.75 or higher) of agreement which included: Work-life balance, Running a total agricultural education program, Working with the community, Level/amount of stress, Time management strategies, Greenhouse operations, Methods of organization, Cross-curricular planning, Laboratory management, How different agriculture programs meet requirements, Agricultural mechanics, Dealing with administrators, How school districts operate, SAEs, Working with parents, and Proficiency awards.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

Based on the results presented in Chapter IV, several conclusions, implications, and recommendations can be made about the experiences that are needed to prepared early career agriculture teachers throughout the United States. A summary of methodology is provided and the research objectives are further discussed in terms of conclusions and recommendations for further research.

Purpose and Objectives

The overarching purpose of this descriptive study is to determine what specific experiences award winning early career agriculture teachers throughout the United States would benefit from and may believe to be pertinent to their success as a teacher, FFA advisor, and SAE supervisor. An expert panel of early career agriculture teacher award winners was used to determine and compile a standardized list of experiences that were agreed upon to be needed by an individual in the field of agricultural education prior to becoming an agriculture teacher. This list may then be used to guide teacher preparation programs, and possibly teacher in-service workshops, to help offer a more focused and complete education. The research objectives of this study were as follows:

1. Identify the characteristics of early career agriculture teacher Outstanding Young Member award winners from 2010-2014 in the United States including age, sex, number of teachers in their agricultural education program, size of the school,

number of years teaching, number of different programs taught at, highest degree obtained, and type of certification.

2. Compile a list of common factors associated with influencing these Outstanding Young Member award winners to pursue a career in agricultural education.
3. Discover which aspects of teaching agriculture early career teacher award winners were most prepared for by their teacher preparation program.
4. Discover which aspects of teaching agriculture early career teacher award winners were least prepared for by their teacher preparation program.
5. Compile a list of experiences, agreed upon by a panel of experts, needed to prepare early career agriculture teachers.

Summary of Methodology

The purpose of this study was to describe specific experiences early career agriculture teacher award winners throughout the Unites States would have liked to have had prior to acquiring an agriculture teaching position. Fraenkel and Wallen (2009), state the importance of making sure that the survey questions are easily understandable, getting the respondents to answer truthfully and to the best of their ability, and getting a sufficient amount of questionnaires completed in order to make the research valid and complete. The dependent variable for this study was the experiences reportedly needed to prepare early career agriculture teachers. A modified Delphi method was used to collect data which included three rounds of researcher-developed questionnaires distributed following the Tailored Design Method (Dillman, Smyth, & Christian, 2009). Round one of the series of questionnaires included open-ended and demographic-type

questions. The questionnaires from rounds two and three were constructed using panelists' answers from the previous rounds and were built using Likert-type five-point rating scales designed to reach a level of agreement which was set *a priori* by the researchers.

A census was taken of all of the National Association of Agricultural Educators Outstanding Young Member Award Winners in the years 2010-2014. The researchers determined that individuals meeting these criteria would have the expertise necessary to understand what is needed in agricultural teacher preparation programs and teacher in-service programs. A list of these individuals was obtained from the National Association of Agricultural Educators. The population included a total of 29 agriculture teachers from multiple states throughout the United States. Round one produced a response rate of $n = 23$ (79%). Of those 23 respondents from the first round, 100% participated in round two and 96% ($n = 22$) of those panelists responded in round three.

Delp, Thesen, Motiwalla, and Seshadri (1977) stated that the Delphi method is a group process designed to solicit responses from purposively selected experts in a given field in order to reach an agreed upon consensus of agreement on a particular topic or issue. The instrument used in this study consisted of three rounds of electronic questionnaires developed using the online survey system, Qualtrics™. Face and content validity was established by faculty members in agricultural education at Texas A&M University. Dalkey, et. al. (1972) recommended a group size of at least 12 to 15 panelists in order to achieve reliability. The number of agricultural educators chosen to participate in this study ($N = 29$) helped to ensure the reliability of this study.

Round one of this study included an electronic questionnaire which consisted of nine demographic-type questions related to personal and professional characteristics of the panel members and five open-ended questions which included: 1) "What led you to pursue a career in agricultural education?" 2) "In terms of your teacher preparation program, what aspects of teaching agriculture did you feel most prepared for?" 3) "In terms of your teacher preparation program, which aspects of teaching agriculture did you feel least prepared for?" 4) "What would you have liked to have known more about before becoming an agriculture teacher?" 5) "What does your agricultural education program participate in the most? (Ex: Livestock Shows, CDEs, FFA Chapter Activities.)"

The round two questionnaire was developed based on answers provided by panelists in round one. Panelists were asked to rate their level of agreement with each statement on a five-point scale (1 = Strongly Disagree; 2 = Disagree; 3 = Uncertain; 4 = Agree; 5 = Strongly Agree). Items that did not reach a consensus of agreement (i.e., ≥ 75% of the panelists indicated "Agree" or "Strongly Agree"), established a priori, were retained and included in the round three questionnaire as per Buriak and Shinn (1989) and Ramsey and Edwards (2011).

The third and final questionnaire of this study required panelists to rate their level of agreement on each item that failed to meet a consensus of agreement (M = 3.75 or higher) on the same five-point, Likert-type scale used in round two. Dalkey, et. al. (1972) suggested that only a slight increase in "consensus of agreement" among the panelists was expected in the third round as compared to round two. Items failing to

reach a consensus of agreement were not included in the final list of experiences needed to prepare early career agriculture teachers.

In order to collect data for this study, Dillman, Smyth, and Christian's (2009) tailored design method was followed. Five points of contact were used on each round of the study. Pre-notice and follow up emails were sent to the panelists via the online survey system, Qualtrics™. Each follow-up email to non-respondents was sent approximately one week apart to encourage participation. Each round of the study lasted approximately one month with one to two weeks between the conclusion of one round and the commencement of another. At the conclusion of the final round, the researchers sent each panel member an email expressing gratitude for participating in the study.

Summary of Findings

The findings of this study suggest that the panel of experts agreed that there were multiple aspects of teaching agriculture that they were adequately prepared for by their teacher preparation program; however, there were a couple of aspects that panelists agreed they were not prepared for when they began their career as an agricultural educator. Additionally, panelists were led to teach agriculture by multiple different means, but many had similar reasons for pursuing this career. Finally, the panel of experts agreed upon a multitude of experiences they would have liked to have had prior to becoming an agriculture teacher.

Objective 1: Identify the Characteristics of Early Career Agriculture Teacher Outstanding Young Member Award Winners

The purpose of research objective one was to identify and describe the demographic characteristics of panel of experts comprised of the NAAE Outstanding Young Member award winners from the years 2010- 2014. Most of the panelists in this study ranged in age from 26-30 years of age (47.8%) or 31-35 years of age (43.5%) while the remaining individuals (n = 2) ranged in age from 36-40 years. The majority of the panelists were female (82.6%) coinciding with the current increase in females in agricultural education while the rest of the panelists (17.4%) were male. Surprisingly, a majority of the panel of experts had furthered their higher education and obtained at least Master's degree (61%) and 7% reported that a Bachelor's degree was the highest degree they had obtained at the time this survey was given. Furthermore, 4.3% reported having obtained a Doctoral degree and one other individual (n = 1) answered "Other".

A majority of panelists worked at single teacher agricultural education program (n = 7) or a two-teacher program (n = 9). Additionally, four teachers (17.4%) reported working in a three-teacher program, one (4.3%) reported working in a four-teacher program, and two panelists (8.7%) reported working in a program with five or more agriculture teachers. Coincidentally, 65.3% of the panel members worked at a smaller school with 999 students or less, 13% worked at a school with 1,000 to 1,499 students, and 21.7% worked at a school with 1,500 or more students. Most of the panelists in this study were traditionally certified (91.3%) while the other 8.7% were alternatively certified. Many of the respondents (52.2%) had completed between seven and 10 years

of teaching professionally by the time this study was given, 39.1% had completed between five and six years of teaching, and 8.7% had completed between three and four years. When asked about the number of different schools they had taught at since becoming an agriculture teacher, a majority of the respondents (56.5%) reported teaching at two or more different schools. A majority of the respondents (95.7%) were Non-Hispanic White in racial/ethnic heritage while only 4.3% reported being Latino or Hispanic American. No other racial or ethnic heritages were reported.

These findings are consistent with Kantrovich's (2007) national study of supply and demand of agriculture teachers which found a great lack of racial diversity in the profession. This study also discovered an increase in the number of newly qualified female teachers, yet still found quite a large gap between the total number of males and females throughout the agricultural education profession (Kantrovich, 2007). The most recent national agricultural education supply and demand study (Foster, Lawver, & Smith, 2014) reaffirmed the lack of diversity yet discovered that over half of the newly qualified teachers (61.4%) were female. The profession of agricultural education has a lot of work to do in terms of recruiting more diverse students and teachers. LaVergne, Jones, Larke, Jr., and Elbert (2012) concluded that "Participation in agricultural education across the context of diversity and inclusion continues to remain stagnant." The question is, how can the profession become better at recruiting and retaining diverse populations? Although these studies show that change is indeed occurring, they also show that it is happening very slowly over time. It is important for researchers in the profession to continue working to find a solution for this dilemma. It seems that

agricultural education is in a vicious cycle when it comes to diversity: the teachers in the profession, mostly Caucasian, attract similar students, mostly Caucasian, who then eventually become the teachers, thus continuing the cycle of homogeneity. This researcher believes that, in order to increase the diversity of the teachers in the profession, we must first increase the diversity of the students in secondary agricultural programs. How then might we achieve this? This is the question left stewing in the minds of agricultural educators everywhere.

The panel of experts reported teaching classes in multiple different Agriculture, Food, and Natural Resources pathways. The pathways with the highest reported frequencies included Animals Systems (n = 15) and Plant Systems (n = 15). Surprisingly, more individuals taught classes in the Natural Resource Systems pathway (n = 13) than in the Comprehensive Systems pathway (n = 12) or the Power, Structural, and Technical Systems pathway (n = 12). The other pathway with a higher frequency worth mentioning is Agribusiness Systems with 11 panelists reportedly teaching classes in this pathway. This variety in pathways could mean that agriculture teachers are beginning to branch out from their past comfort zones of teaching strictly animal and plant sciences. On the other hand, it may be an implication that award winning agriculture teachers are either more willing than other teachers to try new things or, their willingness to try new things contributed to their winning awards. This also demonstrates the shift in focus for agricultural education and the National FFA Organization from farming practices to more broadly applicable subjects such as research, technical systems, communications, and business.

The goal of collecting demographic data for research objective one was to describe the characteristics of the panel of experts and to have a better understanding of who makes up the most recent National Association of Agricultural Educator's Outstanding Young Member award winners from the past five years.

Objective 2: Compile a List of Factors Associated with Influencing Outstanding Young Member Award Winners to Pursue a Career in Agricultural Education

Conclusions

The purpose of research objective two was to determine what common factors might lead individuals to pursue a career as an agricultural educator. Based on responses given by the panel of experts, the researchers concluded that agricultural educators chose their career path based on a variety of factors ranging from having a passion for agriculture (39.1%) to being influenced by their time as a state FFA officer (13%). The panelists also listed positive experiences in their high school agriculture program, FFA, and 4-H (M = 14) as a contributing factor toward their career choice. It may be concluded that, although there may not be just one contributing factor leading individuals to choose to become an agriculture teacher, there are many commonalities in reasoning given by the panelists in this study. The challenge for teacher educators is determining which factors are most associated with leading someone to pursue a career in agricultural education and figuring out how best to use that information to recruit these high-quality, passionate students into pre-service agricultural teacher preparation programs.

Recommendations

The panel of experts listed multiple different factors which reportedly influenced their decision to become an agriculture teacher. Further inquiries should be conducted in order to determine leading factors associated with the decision to teach agriculture. It is suggested that these studies include a larger population of all secondary agriculture teachers throughout each state in the United States in order to achieve more generalizable results. Many studies have been conducted to determine why agriculture teachers leave the profession (Camp, Broyles, & Skelton, 2002; Chapman, 1984; Ingersoll, 2003; Knight & Bender, 1978; Mattox, 1974; Moore & Camp, 1979), but few have inquired as to why they chose to teach in the first place?

This research could possibly contribute to the retainment of agriculture teachers, thus aiding in the teacher shortage epidemic. If researchers could determine the most common factors associated with an individual's decision to pursue a career in agricultural education, secondary agriculture teachers as well as teacher educators may be able to more easily pinpoint students that are most likely to become teachers in the future. Energies could be more focused on recruiting these students versus those who are more likely to pursue different careers in the future. This information may be extremely helpful for teacher educators who frequently deal with students who want to switch from their current major into agricultural education. Teacher educators could use the knowledge gathered from this research to better advise those students who are exploring a change in major as to whether it would best suit them or not. Obviously there are usually exceptions to the norm, but this research would help these agriculture teachers

and teacher educators to focus their recruitment on those individuals who are most likely to enter the profession.

Objective 3: Discover Which Aspects of Teaching Agriculture Early Career Teacher Award Winners Were Most Prepared for by their Teacher Preparation Program

Conclusions

The purpose of research objective three was to determine what subjects, experiences, or general aspects of teaching these award winning teachers believed they were adequately prepared for by their teacher preparation program. The panel of experts for this study reached a consensus of agreement on five of the initial 18 statements provided in round one. It may be concluded that the panelists felt very prepared by their preparation program to teach animal science (M = 4.17) in a secondary agriculture classroom. It can also be concluded that these teacher preparation programs are adequately preparing their students to teach about FFA in the classroom (M = 4.14). According to the findings of this study, these teacher preparation programs are also adequately preparing their future teachers in the fields of classroom instruction (M = 3.96), teaching introductory lessons and units (M = 3.87), and developing curriculum (M = 3.78).

Out of the 18 statements presented to the panelists, 13 aspects failed to reach a consensus of agreement after all three rounds of the study. The researchers concluded that although it was found that teacher preparation programs are sufficiently preparing their future teachers to write lesson plans and teach about animal science and FFA, there

are still areas which need to be covered more in depth throughout the program. It can be concluded that specific subjects that need to be covered more in depth include Horticulture, Agricultural Mechanics, Wildlife, and Forestry. These panelists were also not sufficiently prepared for managing a classroom, differentiating instruction for all students, networking, or managing their time efficiently. Other researchers have similarly discovered the importance of understanding student differences including special populations and differences in students' learning styles (Dormody & Torres, 2002; Elbert & Baggett, 2003).

The factors teachers were most prepared for with the highest means were teaching Animal Science (M = 4.17) and teaching FFA (M = 4.14). The factors teachers were reportedly most prepared for with the lowest means were time management in and out of the classroom (M = 2.50) and teaching Forestry (M = 2.41). Time management has been a stubborn and persistent problem for teachers to overcome for decades, but agriculture teachers especially struggle with this issue due to the multitude of demands that accompany being an agriculture teacher, agriculture project supervisor, and FFA advisor (Murray et. al., 2011; Lambert et. al., 2011).

Due to the vast number of agricultural education courses that could potentially be offered in a secondary program, it is unrealistic to suggest that pre-service teachers could be adequately prepared for each and every possible subject by their agricultural teacher preparation program. Furthermore, classes such as Forestry are very applicable in areas with a large forestry industry, but may not necessarily be as applicable in those places that have more tumbleweeds than trees. There is always potential for improvement,

especially in the field of education, and this study has helped to point out some specific areas that might be addressed by teacher preparation programs or professional development workshops in the future.

Recommendations

Based on the findings for research objective three, these teacher preparation programs should continue to provide adequate information on the subjects of teaching animal science, teaching FFA, classroom instruction, introductory lessons and units, and developing curriculum. Dobbins and Camp (2003) reported the need for more instruction in curriculum development, teaching methods, and teaching techniques. The findings of this study, however, indicate that there has been a shift in the in-service needs of early career teachers over the past 15 years.

It is recommended that agricultural education teacher educators involved in teacher preparation programs either adjust curriculum to incorporate more information on the subjects of Horticulture, Agricultural Mechanics, Wildlife, and Forestry in a "How to teach" type of context or guide and encourage their students to take more classes in these subjects based on their particular needs. For example, the degree plan for a student in agricultural education should include an introductory Horticulture class as well as the supplementary hands-on laboratory course which coincides with said introductory lecture-based course. These findings are consistent with Duncan et. al. (2006) which found technical agriculture pre-service and in-service preparation needs of agriculture teachers in teaching skills and concepts in Landscape Design and Maintenance and teaching skills and concepts in Forestry. It is suggested that teacher

preparation programs conduct a needs assessments of their students to determine the specific strengths and weaknesses for each program.

In order to incorporate more classroom management techniques into the curriculum, it is recommended that agriculture education courses require future teachers to role-play a typical high-school classroom or encourage more authentic teaching experiences before the actual student teaching internship. Prior research suggests that classroom management, motivating students to learn, and managing student behavioral problems have continuously been issues faced by early career teachers (Edwards & Briers, 1999; Garton & Chung, 1996; Joerger, 2002; Mundt & Connors, 1999). The researchers also recommend that teacher preparation programs and/or teacher in-service include lessons or workshops over how to properly and efficiently network with other individuals in the profession. This might include developing a class that takes students to state and/or national agriculture teacher conferences and state and/or national FFA conventions which places students in the position to constantly network with other agriculture teachers, high school students, and school administrators. Agricultural teacher preparation courses might also include lessons or units explaining and role-playing the interview process and how to effectively market oneself to possible future places of employment.

Once again, it is unrealistic to assume that the teacher preparation program can adequately prepare their students for every possible subject or scenario that may occur during their career as an agriculture teacher. However, some of these reported inadequacies could be addressed by the preparation programs without having to overhaul

the entire system and/or curriculum currently being implemented. Additional information could also be provided to early career teachers during in-service or other professional development workshops. The goal of this study was not to point out all of the inadequacies of agricultural teacher preparation programs across the nation, but to simply discover places for potential improvement throughout the programs in order to make what is already good even better.

Objective 4: Discover Which Aspects of Teaching Agriculture Early Career Teacher Award Winners were Least Prepared for by their Teacher Preparation Program

Conclusions

The purpose of research objective four was to determine what subjects, experiences, or general aspects of teaching these award winning teachers believed they were not adequately prepared for by their teacher preparation program. Out of the 35 statements provided to the panelists in round two, only two aspects of teaching agriculture reached a consensus of agreement. The panelists agreed that they were not sufficiently prepared to begin planning for retirement by their teacher preparation program. The second factor that these early career award winners claimed to be least prepared for was balancing their professional life with their home life, also referred to simply as work-life balance (M = 4.13). These findings echo those of Murray et. al. (2011) which found that both male and female agriculture teachers have trouble balancing both their career life and their family life. Similarly, Lambert et. al. (2011) found that beginning teachers struggle with finding time to spend at home with their

family because much of their time is spent either physically at the school where they are employed or mentally at the school, working on lesson plans or supervising students' agriculture projects.

Thirty-three of the 35 items presented to the panel of experts in round two failed to reach the agreed upon level of consensus. It can be concluded that the panelists do not perceive that they were inadequately prepared for aspects such as managing a greenhouse, workload, paperwork, communicating with parents, teachers, and administration, recruitment of diverse students, differentiated instruction, classroom management, working with special needs students, or certification requirements. The factors teachers were least prepared for with the highest means were planning for retirement (M = 4.13) and work-life balance (M = 4.13). The factors with the lowest mean was teaching FFA (M = 2.14).

One question posed from these findings to the profession of agricultural education is: who is responsible for educating future teachers about general employment topics such as how to plan for retirement? Are the teacher preparation programs charged with imparting this knowledge onto these pre-service teachers or is it generally accepted to be something one learns over time as experience is gained in the teaching profession? The same may be said for developing strategies to overcome the struggles of balancing the home and work life. Myers, Dyer, and Washburn (2005) found that a large majority (70.4%) of agriculture teachers in their study reported struggling to balance their personal and professional lives. Tippens, Ricketts, Morgan, Navarro, and Flanders (2013) similarly found that, other than retirement, children and family commitments

were the primary cause for the early attrition of agriculture teachers. Work-life balance has consistently proven to be a struggle for all agriculture teachers, many times being linked to attrition, so how can the profession best prepare pre-service teachers for this struggle?

Recommendations

Based on these findings, it is recommended that teacher preparation and in-service programs spend more time teaching these early career teachers how to plan for retirement. This may be something as simple as including this as a lesson topic in an agricultural education course or developing an entire in-service workshop devoted to the subject of planning for life after retirement for those early career teachers already in the field. It is also important that preparation programs give future teachers a realistic view of what their lives will be like as agricultural educators. This might involve having students research the lives of actual agriculture teachers and writing a kind of "Day in the life of…" type paper. Some may argue, however, that there is not truly a way to sufficiently prepare future teachers for balancing their work and home life until they actually become a teacher and learn as they go. Could this be a contributing factor to the profession's struggle to retain agriculture teachers until they are eligible for retirement? Further research into this dilemma is recommended.

Objective 5: Compile a List of Experiences, Agreed upon by a Panel of Experts, Needed to Prepare Early Career Agriculture Teachers

Conclusions

The purpose of research objective five was to determine what the panelists would have liked to have known more about before becoming agriculture teachers and compile a list of these experiences needed to prepare other early career agriculture teachers. Of the 32 statements provided to the panel of experts in round two, 16 items reached a consensus of agreement after the third and final round of the study. Consistent with the findings in research objective four, the panelists reported that they would have liked to have known more about the struggle of balancing their work life with their home life (M = 4.43). Furthermore, the panelists would have liked to have learned more about running a total agriculture program, working with the community, the stress of being an agriculture teacher, time management strategies, greenhouse operations, methods of organization, cross-curricular planning, laboratory management, how different agriculture programs meet requirements, agricultural mechanics, dealing with administrators, how school districts operate, SAEs, working with parents, and proficiency awards.

Sixteen of the 32 initial items presented in round two failed to reach consensus of agreement throughout the study. We concluded that items such as meat science, record-keeping, paperwork, content delivery, and livestock handling are not thought to be lacking throughout a student's teacher preparation program. The factors that teachers would have liked to have known more about with the highest means included work-life

balance (*M* = 4.43), running a total agricultural education program (*M* = 4.22), working with the community (M = 4.14), and the level/amount of stress involved with becoming an agriculture teacher (*M* = 4.00). The factors with the lowest means after all three rounds of the study included livestock handling (*M* = 3.14), utilizing prepared materials (*M* = 3.09), and how to follow course outlines (*M* = 3.05).

Recommendations

According to the panel of experts involved in this study, there are many different experiences that they would have liked to have had prior to becoming an agriculture teacher. The 16-item list provided by the panelists give the researchers an idea of what might need to be included or discussed more in depth throughout the teacher preparation program or teacher in-service. Work-life balance seems to be a consistently troublesome factor that early career agriculture teachers struggle with (Lambert, et. al., 2011; Murray et. al., 2011; Myers, Dyer, & Washburn, 2005; Sorensen & McKim, 2014; Tippens et. al., 2013). Whether future teachers can be fully prepared to deal with this struggle before actually becoming a teacher or not, teacher preparation programs can incorporate more lessons on time management strategies and methods of organization throughout their programs. This might help future teachers to feel more prepared to fight the battle that is the struggle of balancing one's personal and professional life. This might also help cut down on the stress that these teachers feel, especially within their first few years of teaching, thereby possibly lowering the attrition rate of agriculture teachers.

Researchers also recommend that teacher preparation programs incorporate greenhouse operations and laboratory management into their curriculum. These

programs might also spend more time discussing how to communicate effectively with administrators, people in the community, and parents of students in the agriculture program. Supervised agricultural experiences and proficiency awards are two topics that programs might spend more time on as well, whether in the teacher preparation program or as an in-service workshop. The challenge for incorporating more into the curriculum for pre-service teachers, however, is that many of these agricultural teacher preparation programs are limited by the maximum number of hours in an undergraduate degree plan. One possible option might include performing a program evaluation in order to determine possible content or courses offered on the degree plan that could potentially be replaced. This might include simply changing a few lesson plans in a class or completely re-evaluating and reformatting an entire course to fit more closely with the reported needs of pre-service teachers.

Recommendations for Further Research

The findings of this study provide for several opportunities for further research throughout the field of agricultural education. It is recommended that this study be replicated for future generations of National Association of Agricultural Educators Outstanding Young Member award winners in order to stay up-to-date with what these early career agriculture teachers believe is pertinent to include in their teacher preparation programs and teacher in-service workshops. This study should also be replicated throughout individual states, possibly using award winners from individual state agriculture teacher associations.

Because this study was a modified Delphi in nature, the researchers would like to see a more quantitative take on this study which would include all agriculture teachers throughout the nation and not just the award winners. This would help to increase the generalizability of the findings and overcome the limitations of this study. The researchers would like to see what other agriculture teachers struggle with that could possibly have been alleviated by adjusting something during their teacher preparation program. The questions that still remain in the minds of the researchers after this study are simply this: "What do agriculture teachers struggle with?" and "How could we help or alleviate those struggles?"

More research in needed to determine exactly why individuals make the career decision to become an agriculture teacher. A correlational study determining the relationships between different characteristics and experiences of current and future agriculture teachers and their decision to join the profession is needed in this research field. If researchers could determine common factors associated with someone choosing to become an agriculture teacher, the answer to the teacher shortage might be found.

An interesting finding of this study was that a majority (65.3%) of the Outstanding Young Member award winners who made up the panel of experts had achieved a Master's or Doctoral degree. The researchers believe a study should be conducted to see if there is a relationship between obtaining a graduate degree and winning teaching awards at the state or national level. Research could also be aimed at determining if the value of a Bachelor's degree is declining and the value of a Master's degree is becoming closer to that of a Bachelor's.

This study determined what Agriculture, Food, and Natural Resources pathways were most commonly taught by the panel of experts. The researchers would like to see a study done comparing the classes/subjects that these panelists reported teaching to what they reportedly would have liked to have known more about before becoming an agriculture teacher. It would be interesting to determine if these teachers ended up teaching only the classes they felt comfortable in or if they stepped out of their comfort zone over time and taught new, unfamiliar content as they became more experienced teachers.

The goal of this study was to determine what these Outstanding Young Member award winners would have liked to have known more about before becoming an agriculture teacher. The panelists provided a multitude of experiences and subjects that they would have liked to have learned more about in their teacher preparation programs or in a teacher in-service workshop. It is suggested that an assessment be conducted of agricultural teacher preparation programs throughout the United States in order to determine what courses are being taught at each program, the length or even existence of an on-campus portion of the student teaching internship, the length of the actual off-campus student teaching experience, etc. An assessment of student teacher self-efficacy could be conducted in order to determine how efficacious student teachers felt before their student teaching semester and how efficacious they felt at the conclusion of that experience. The point of these assessments is not to compile a list stating which program is better than another, but to simply discover what techniques, courses, sequences, or

strategies seem to work the best so that all of the programs can learn and benefit from one another.

REFERENCES

Bennett, P. N., Iverson, M. J., Rohs, F. R., Langone, C. A., & Edwards, M. C. (2002). Job satisfaction of agriculture teachers in Georgia and selected variables indicating their risk of leaving the teaching profession. In *29th National Agricultural Education Research Conference. Las Vegas, NV*.

Birkenholz, R. J., & Harbstreit, S. R. (1987). Analysis of the inservice needs of beginning vocational agriculture teachers. *The Journal of the American Association of Teacher Educators in Agriculture, 28*(1), 41-49.

Boone Jr, H. N., & Boone, D. A. (2009). An assessment of problems faced by high school agricultural education teachers. *Journal of Agricultural Education*, *50*(1), 21-32. doi: 10.5032/jae.2009.01021

Buriak, P., & Shinn, G. C. (1989). Mission, initiatives, and obstacles to research in agricultural education: A national Delphi using external decision makers. *Journal of Agricultural Education, 30*(4), 14–23. doi: 10.5032/jae.1989.04014

Camp, W. G., Broyles, T., & Skelton, N. S. (2002). A national study of the supply and demand for teachers of agricultural education in 1999-2001. Retrieved from http://aaaeonline.org.

Camp, W.G., Clarke, A., & Fallon, M. (2000). Revisiting supervised agricultural experience. *Journal of Agricultural Education, 41*(3), 13-22. doi: 10.5032/jae.2000.03013

Chapman, D. W. (1984). Teacher retention: The test of a model. *American Educational Research Journal*, *21*(3), 645-658. doi: 10.3102/00028312021003645

Conroy, C. (2004). Standards and Agricultural Education: It's Not Just Plows, Cows, and Sows Anymore (but It MIGHT Be Physical Science, the Mammary System, and Breeding for Lean Meat). *The Agricultural Education Magazine*, *77*(2), 4.

Croom, D. B. (2008). Development of the integrated three-component model of agricultural education. *Journal of Agricultural Education, 49*(1), 110. doi: 10.5032/jae.2008.01110

Dalkey, N. C., Rourke, D. L., Lewis, R., & Snyder, D. (1972). *Studies in the quality of life*. Lexington, MA: Lexington Books.

Darling-Hammond, L. (2003). Keeping good teachers: Why it matters, what leaders can do. *Educational Leadership, 60*(8), 6-13.

Delbecq, A. L., Van de Ven, A. H., & Gustafson, D. H. (1975). *Group techniques for program planning: A guide to nominal group and Delphi processes.* Glenview, IL: Scott Foresman.

Delp, P., Thesen, A., Motiwalla, & Seshadri, N. (1977). Delphi: System tools for project planning. Columbus OH: National Center for Research in Vocational Education, The Ohio State University.

Dewey, J. (1938) Education and Experience. New York: Simon and Schuster.

Dillman, D. A., Smyth, J. D., & Christian, L. M. (2009) Internet, mail, and mixed-mode surveys: The tailored design method (3rd ed.). New York, NY: Wiley and Sons.

Dobbins, T. R., & Camp, W. G. (2003). Clinical experiences for agricultural teacher education programs in North Carolina, South Carolina, and Virginia. *Journal of Agricultural Education, 44*(4), 11-21. doi: 10.5032/jae.2003.04011

Dormody, T. J., & Torres, R. M. (2002). A follow-up study of agricultural education program graduates on teaching competencies. *Journal of Agricultural Education, 43*(4), 33-45. doi: 10.5032/jae.2002.04033

Duffield, C. (1993). The Delphi technique: A comparison of results obtained using two expert panels. *International Journal of Nursing Studies, 30*(3) 227-237.

Duncan, D. W., Ricketts, J. C., Peake, J. B., & Uesseler, J. (2006). Teacher preparation and inservice needs of Georgia agriculture teachers. *Journal of Agricultural Education, 47*(2), 24. doi: 10.5032/jae.2006.02024

Edwards, M. C. & Briers, G. E. (1999). Assessing the inservice needs of entry-phase agriculture teachers in Texas: A discrepancy model versus direct assessment. *Journal of Agricultural Education, 40*(3), 40-49. doi: 10.5032/jae.1999.03040

Elbert, C. D., & Baggett, C. D. (2003). Teacher competence for working with disabled students as perceived by secondary level agricultural instructors in Pennsylvania. *Journal of Agricultural Education*, *44*(1), 105-115. doi: 10.5032/jae.2003.01105

Fink, A., Kosecoff, J., Chassin, M., & Brook, R. (1991). *Consensus Methods: Characteristics and guidelines for use.* Santa Monica, CA: RAND.

Foster, D., Lawver, R., & Smith, A. (2014) *National Agricultural Education Supply & Demand Study*. Retrieved from http://www.naae.org/teachag/NSD%20Exec%20Summary%20Final%202014.pdf

Fraenkel, J. R., & Wallen, N. E. (2009). How to design and evaluate research in education. New York, NY: McGraw-Hill.

Fulton, K., Yoon, I., & Lee, C. (2005). Induction into learning communities. National Commission of Teaching and America's Future. Washington, DC. Retrieved from: http://eric.ed.gov/PDFS/ED494581.pdf

Garton, B. L., & Chung, N. (1996). The inservice needs of beginning teachers of agriculture as perceived by beginning teachers, teacher educators, and state supervisors. *Journal of Agricultural Education*, *37*, 52-58. doi: 10.5032/jae.1996.03052

Ingersoll, R. (2003). Is there really a teaching shortage? Center for the Study of Teaching Policy and the Consortium of Policy Research in Education. University of Washington. Retrieved from http://depts.washington.edu/ctpmail/PDFs/Shortage-RI-09-2003.pdf

Jenkins III, C. C. (2008). *A quality agricultural education program: A national Delphi study*. (University of Kentucky Master's Theses). Paper 516. Retrieved from http://uknowledge.uky.edu/gradschool_theses/516

Joerger, R., & Boettcher, G. (2000). A description of the nature and impact of teaching events and forms of beginning teacher assistance as experienced by Minnesota agricultural education teachers. *Journal of Agricultural Education, 41*(4), 104-115. doi: 10.5032/jae.2000.04104

Joerger, R. M. (2002). A comparison of the inservice education needs of two cohorts of beginning Minnesota agricultural education teachers. *Journal of Agricultural Education, 43*(3), 11-24. doi: 10.5032/jae.2002.03011

Jones, A. D. (2013). *Assessing student motivation to participate in FFA career development events* (Doctoral dissertation, North Carolina State University).

Kantrovich, A. J. (2007). A national study of the supply and demand for teachers of agricultural education from 2004-2006. *American Association for Agricultural Education.* Retrieved from http://aaaeonline.org/Resources/Documents/2004_2006%20Supply%20and%20Demand%20Study.pdf

Kantrovich, A. J. (2010). *The 36th volume of a national study of the supply and demand for teachers of agricultural education from 2006-2009. American Association for Agricultural Education.* Retrieved from http://aaaeonline.org/files/supply_demand/2010%20Supply%20and%20Demand%20study%20re port%20v5.pdf

Knight, J. A., & Bender, R. E. (1978). Why vocational agriculture teachers in Ohio leave teaching. *The Journal of the American Association of Teacher Educators in Agriculture, 19*(3), 11–17. doi:10.5032/jaatea.1978.03011

Lambert, M. D., Henry, A. L., & Tummons, J. D. (2011). How do early career agriculture teachers talk about their time?. *Journal of Agricultural Education,52*(3), 50-63. doi: 10.5032/jae.2011.03050

LaVergne, D. D., Jones, W. A., Larke Jr, A., & Elbert, C. D. (2012). The effect of teacher demographic and personal characteristics on perceptions of diversity inclusion in agricultural education programs. *Journal of Agricultural Education, 53*(3), 84-97. doi: 10.5032/jae.2012.03084

Layfield, K. D., & Dobbins, T. R. (2002). Inservice needs and perceived competencies of South Carolina agricultural educators. *Journal of Agricultural Education*, *43*(4), 46-55. doi: 10.5032/jae.2002.04046

Linstone, H. A. & Turoff, M. (Eds.). (2002). *The Delphi method: Techniques and applications*. Retrieved from http://is.njit.edu/pubs/delphibook/delphibook.pdf

Lytle, J. H. (2000). Teacher education at the millennium: A view from the cafeteria. *Journal of Teacher Education*, *51*(3), 174-179.

Mattox, K. E. (1974). Why teachers quit. *The Agricultural Education Magazine*, 47(6), 140–142.

Moore, G. E. (1988). The forgotten leader in agricultural education: Rufus W. Stimson. *The Journal of the American Association of Teacher Educators in Agriculture*, *29*(3), 50-58. doi: 10.5032/jaatea.1988.03050

Moore, G. E., & Camp, W. G. (1979). Why vocational agriculture teachers leave the profession: A comparison of perceptions. *The Journal of the American Association of Teacher Educations in Agriculture*, *20*(3), 11-18.

Mundt, J. P., & Connors, J. J. (1999). Problems and challenges associated with the first years of teaching agriculture: A framework for preservice and inservice education. *Journal of Agricultural Education*, *40*, 38-48. doi: 10.5032/jae.1999.01038

Murray, K., Flowers, J., Croom, B., & Wilson, B. (2011). The agricultural teacher's struggle for balance between career and family. *Journal of Agricultural Education, 52*(2), 107-117. doi: 10.5032/jae.2011.02107

Myers, B. E., & Dyer, J. E. (2004). Agriculture teacher education programs: A synthesis of the literature. *Journal of Agricultural Education, 45*(3), 44-52. doi: 10.5032/jae.2004.03044

Myers, B. E., Dyer, J. E., & Washburn, S. G. (2005). Problems facing beginning agriculture teachers. *Journal of Agricultural Education, 46*(3), 47. doi: 10.5032/jae.2005.03047

National Association of Agricultural Educators. (2015). NAAE awards, grants, and professional development opportunities. Retrieved from http://www.naae.org/resources/awards/#oym

National Council for Agricultural Education. (2000). The national strategic plan and action agenda for agricultural education: Reinventing agricultural education for the year 2020. Alexandria, VA: Author.

National FFA Organization. (2015a). FFA constitution and bylaws. Retrieved from https://www.ffa.org/about/what-is-ffa/constitution-bylaws

National FFA Organization. (2015b). Mission and motto. Retrieved from https://www.ffa.org/About/WhoWeAre/Pages/MissionandMotto.aspx

National FFA Organization. (2015c). Supervised agricultural experience. Retrieved from https://www.ffa.org/About/WhoWeAre/SAE/Pages/default.aspx

National FFA Organization (2015d). The three-circle model. Retrieved from https://www.ffa.org/About/WhoWeAre/Pages/AgriculturalEducation.aspx

Newcomb, L. H., McCracken, J. D., Warmbrod, J. R., & Whittington, M. S. (2004). *Methods of teaching agriculture* (3rd ed.). Upper Saddle River, NJ: Pearson/ Prentice Hall.

Phipps, L. J., & Osborne, E. W. (1988). Handbook on agricultural education in public schools. Danville, IL: Interstate.

Ramsey, J. W., & Edwards, M. C. (2011). Entry-level technical skills that agricultural industry experts expected students to learn through their supervised agricultural experiences: A modified Delphi study. *Journal of Agricultural Education*, *52*(2), 82-94. doi: 10.5032/jae.2011.02082

Roberts, T. G., & Dyer, J. E. (2004). Characteristics of effective agriculture teachers. *Journal of Agricultural Education*, *45*, 82-95. doi: 10.5032/jae.2004.04082

Rojewski, J. W. (2002). Preparing the workforce of tomorrow: A conceptual framework for career and technical education. *Journal of Vocational Education Research*, *27*(1), 7-35.

Rosenshine, B., & Furst, N. (1971). Research on teacher performance criteria. In *Research in teacher education: a symposium. Englewood Cliffs, NJ: Prentice-Hall* (pp. 37-72).

Sorensen, T. J., & McKim, A. J. (2014). Perceived work-life balance ability, job satisfaction, and professional commitment among agriculture teachers. *Journal of Agricultural Education*, *55*(4), 116-132. doi: 10.5032/jae.2014.04116

Stair, K. S., Warner, W. J., & Moore, G. E. (2012). Identifying concerns of pre-service and in service teachers in agricultural education. *Journal of Agricultural Education*, *53*(2), 153 164. doi: 10.5032/jae.2012.02153

Stimson, R. W. (1919). *Vocational agricultural education by home projects*. New York: Macmillan.

Stufflebeam, D. L., McCormick, C. H., Binkerhoff, R. O., & Nelson, C. O. (1985). Conducting educational needs assessments. Boston: Kluwer Nijhoff Publishing.

Swan, B. G., Wolf, K. J., & Cano, J. (2011). Changes in teacher self-efficacy from the student teaching experience through the third year of teaching. *Journal of Agricultural Education*, *52*(2), 128. doi: 10.5032/jae.2011.02128

Talbert, B. A., Camp, W. G., & Heath-Camp, B. (1994). A year in the lives of three beginning agriculture teachers. *Journal of Agricultural Education*, *35*(2), 31-36. doi: 10.5032/jae.1994.02031

Talbert, B. A., Vaughn, R., Croom, D. B., & Lee, J. S. (2007). *Foundations of agricultural education* . Danville, IL.

Tippens, A., Ricketts, J. C., Morgan, A. C., Navarro, M., & Flanders, F. B. (2013). Factors related to teachers' intention to leave the classroom early. *Journal of Agricultural Education, 54*(4), 58-72. doi: 10.5032/jae.2013.04058

Torres, R. M., Ulmer, J. D., & Aschenbrener, M. S. (2007). Workload distribution among agriculture teachers. *Journal of Agricultural Education, 49*(2), 75-87. doi: 10.5032/jae.2008.02075

Veenman, S. (1984). Perceived problems of beginning teachers. *Review of Educational Research, 54*(2), 143-178.

Washburn, S. G., & Dyer, J. E. (2006). Inservice needs of beginning agriculture teachers. *Proceedings of the 33rd National Agricultural Education Research Conference*, 33, 577-589.

Wirth, A. G. (1972). Charles A. Prosser and the Smith-Hughes Act. *The Educational Forum* (Vol. 36, No. 3, pp. 365-371). Taylor & Francis Group.

APPENDIX A

ROUND ONE INSTRUMENT

Default Block

Howdy!

Thank you so much for your willingness to serve as a panelist in this study of early career agriculture teacher award winners. This survey is the first round of a three-round study. This particular survey consists of 5 short open-ended questions and 9 demographic-type questions related to your career as an agricultural educator. This should take no longer than 10-15 minutes of your time.

Please use the next and previous buttons to navigate through the survey.

The answers you provide are incredibly important to creating a better understanding of what experiences are needed to prepare early career agriculture teachers.

By selecting to complete the survey, you are authorizing Texas A&M University to use your anonymous responses as a part of this study.

For more information regarding the study or for any questions related to this research please feel free to access the information sheet through the following link:

Information sheet

Additionally, feel free to address any questions to:
Lockie Breeding
lockie.breeding@ag.tamu.edu
Office: 979-458-7983
Mobile: 432-385-6777

I have read and understood the above consent form and desire of my own free will to participate in this study.

- ○ Yes
- ○ No

What led you to pursue a career in agricultural education?

In terms of your teacher preparation program, what aspects of teaching agriculture did you feel **most** prepared for?

In terms of your teacher preparation program, what aspects of teaching agriculture did you feel **least** prepared for?

What would you have liked to have known more about before becoming an agriculture teacher?

What does your agricultural education program participate in the most? (Ex: Livestock Shows, Career Development Events, FFA Chapter Activities)

Which of the following Agriculture, Food, and Natural Resources pathways do you teach in your program? Please check all that apply.

- ☐ Agribusiness Systems
- ☐ Animal Systems
- ☐ Biotechnology Systems
- ☐ Environmental Service Systems
- ☐ Food Products and Processing Systems
- ☐ Natural Resource Systems
- ☐ Plant Systems
- ☐ Power, Structural, and Technical Systems
- ☐ Comprehensive Systems (Principles of Agriculture, Food, and Natural Resources)

Block 2

What is your age?

What is your sex?

- ○ Male
- ○ Female

Which of the following best represents your racial or ethnic heritage?

- ○ Non-Hispanic White
- ○ Black, Afro-Caribbean, or African American
- ○ Latino or Hispanic American
- ○ East Asian or Asian American
- ○ South Asian or Indian American
- ○ Middle Eastern or Arab American
- ○ Native American or Alaskan Native
- ○ Other

What is the highest degree you have obtained?

- Bachelor's
- Master's
- Educational Specialist
- Doctoral
- Other

Block 3

How many years of teaching agriculture have you completed?

How many schools have you taught at since becoming an agriculture teacher?

How many years did you teach at each school?

School 1

School 2

How many years did you teach at each school?

School 1

School 2

School 3

How many years did you teach at each school?

School 1

School 2

School 3

School 4

How many years did you teach at each school?

School 1

School 2

School 3

School 4

School 5

Block 1

How many agriculture teachers are in your current program, including yourself?

- 1
- 2
- 3
- 4
- 5 or more

How many students are in your school?

- <500
- 500-999
- 1,000-1,499
- 1,500-2,000
- >2,000

By what means were you certified to teach?

- Traditionally Certified (Ex: Univerisity)
- Alternatively Certified (Ex: iteachU.S., Post-Baccalaureate Initial Certification, etc.)

APPENDIX B

ROUND TWO INSTRUMENT

Default Block

Howdy!

Thank you so much for your willingness to continue serving as a panelist in this study of early career agriculture teacher award winners. This survey is the second round of a three-round study. This particular survey consists of short statements that you will be asked to rate your level of agreement with. These statements are the compiled result of information received from the round one questionnaire. This should take no longer than 10-15 minutes of your time.

Please use the next and previous buttons to navigate through the survey.

The answers you provide are incredibly important to creating a better understanding of what experiences are needed to prepare early career agriculture teachers.

By selecting to complete the survey, you are authorizing Texas A&M University to use your anonymous responses as a part of this study.

For more information regarding the study or for any questions related to this research please feel free to access the information sheet through the following link:

Information sheet

Additionally, feel free to address any questions to:
Lockie Breeding
lockie.breeding@ag.tamu.edu
Office: 979-458-7983
Mobile: 432-385-6777

I have read and understood the above consent form and desire of my own free will to participate in this study.

- ○ Yes
- ○ No

Block 1

1. In terms of your teacher preparation program (traditional or alternative), which of the following aspects of teaching agriculture did you feel **MOST** prepared for? *Please rate the following items on*

a scale from Strongly Disagree to Strongly Agree

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Time Management in and out of Classroom	○	○	○	○	○
Introductory Lessons/Units	○	○	○	○	○
Classroom Management	○	○	○	○	○
Understanding Complexities of Being an Agriculture Teacher	○	○	○	○	○
Differentiated Instruction	○	○	○	○	○
Inquiry-Based Learning	○	○	○	○	○
Networking	○	○	○	○	○
Teaching Multicultural Students	○	○	○	○	○
Developing Curriculum (Writing Lesson Plans)	○	○	○	○	○
Teaching Animal Science	○	○	○	○	○
Teaching Horticulture	○	○	○	○	○
Teaching Forestry	○	○	○	○	○
Teaching High-Level Concepts	○	○	○	○	○
Teaching FFA	○	○	○	○	○
Classroom Instruction	○	○	○	○	○
Teaching Wildlife	○	○	○	○	○
Completing Duties that take Place Outside Class Time	○	○	○	○	○
Basic Agricultural Mechanics	○	○	○	○	○

Please feel free to include any additional comments, suggestions, or items you believe should be added to this list

Block 2

2. In terms of your teacher preparation program (traditional or alternative), what aspects of teaching agriculture did you feel **LEAST** prepared for? Please rate the following items on a scale from Strongly Disagree to Strongly Agree

(Ex: I was LEAST prepared for Agricultural Mechanics; therefore, I would mark "Agree" or "Strongly Agree")

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Managing a Greenhouse	○	○	○	○	○
Communicating with Teaching Partner(s)	○	○	○	○	○
Classroom Management	○	○	○	○	○
Differentiated Instruction	○	○	○	○	○
Career Preparation	○	○	○	○	○
Managing a Chapter with a Classroom	○	○	○	○	○
Management of Equipment	○	○	○	○	○
Agricultural Mechanics	○	○	○	○	○
Management of Laboratory Area	○	○	○	○	○
Communicating with Administration	○	○	○	○	○
Recruitment of Diverse Students	○	○	○	○	○
Following a Textbook/Approved Outline (As a primary teaching tool)	○	○	○	○	○
Work-Life Balance	○	○	○	○	○
Teaching FFA	○	○	○	○	○
Communicating with Parents	○	○	○	○	○
Workload	○	○	○	○	○
Teaching SAEs	○	○	○	○	○
Time Management	○	○	○	○	○

Question 2 Continued: "In terms of your teacher preparation program (traditional or alternative), what aspects of teaching agriculture did you feel **LEAST** prepared for?"

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Dealing with Finances	○	○	○	○	○
Making Lessons Hands-On	○	○	○	○	○
Renewal Processes	○	○	○	○	○
Importance of Marketing the Agriculture Program	○	○	○	○	○
Filling out Applications (such as Proficiencies and State Degrees)	○	○	○	○	○
Planning Activities for Topics Taught	○	○	○	○	○
How Reimbursement Funding Works	○	○	○	○	○
Teaching Methodology	○	○	○	○	○

Teacher Evaluations (By Principals, Administrators, etc.)					
Record-Keeping					
Certification Requirements					
Laboratory Courses					
Planning for Retirement					
Working with Special Needs Students					
Following Approved Course Outlines (Approved by the School)					
Scheduling Lessons					
Paperwork					

Please feel free to include any additional comments, suggestions, or items you believe should be added to this list

Block 3

3. What would you have liked to have known more about before becoming an agriculture teacher? Please rate the following items on a scale from Strongly Disagree to Strongly Agree

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Working with the Community					
Work-Life Balance					
Meat Science					
Professional Organizations and Resources Available					
Small Engines					
Working with other Teachers					
Agricultural Mechanics					
Level/Amount of Stress					
Methods of Organization					
Time Management Strategies					
Career Preparation					
SAEs					
Greenhouse Operations					

Livestock Handling	○	○	○	○	○
Working with Parents	○	○	○	○	○
Dealing with Administrators	○	○	○	○	○

Question 3 Continued: "What would you have liked to have known more about before becoming an agriculture teacher?"

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
How to Follow Course Outlines	○	○	○	○	○
What it Takes to Have a Successful Agriculture Education Program	○	○	○	○	○
Running a Total Agricultural Education Program	○	○	○	○	○
Cross-Curricular Planning (Incorporating core subjects into agriculture classes)	○	○	○	○	○
Myself as a Teacher (Teaching Identity)	○	○	○	○	○
Content Delivery	○	○	○	○	○
Utilizing Prepared Materials (such as textbooks/workbooks)	○	○	○	○	○
Laboratory Management	○	○	○	○	○
How Different Agriculture Programs Meet Requirements	○	○	○	○	○
Proficiency Awards	○	○	○	○	○
Curriculum Development	○	○	○	○	○
How to keep FFA from Overshadowing Classroom Instruction	○	○	○	○	○
Classroom Managment	○	○	○	○	○
Record-Keeping	○	○	○	○	○
How School Districts Operate	○	○	○	○	○
Paperwork	○	○	○	○	○

Please feel free to include any additional comments, suggestions, or items you believe should be added to this list

APPENDIX C

ROUND THREE INSTRUMENT

Default Block

Howdy!

Thank you so much for your wonderful input in the past two rounds of this study of early career agriculture teacher award winners. This survey is the third and **final round** (Whoop!) of a three-round study. This particular survey consists of short statements that you will be asked to rate your level of agreement with. In this survey you will be asked to re-evaluate the items from round two that did not reach consensus. This should take no longer than 10-15 minutes of your time.

Please use the next and previous buttons to navigate through the survey.

The answers you provide are incredibly important to creating a better understanding of what experiences are needed to prepare early career agriculture teachers.

By selecting to complete the survey, you are authorizing Texas A&M University to use your anonymous responses as a part of this study.

For more information regarding the study or for any questions related to this research please feel free to access the information sheet through the following link:

Information Sheet

Additionally, feel free to address any questions to:
Lockie Breeding
lockie.breeding@ag.tamu.edu
Office: 979-458-7983
Mobile: 432-385-6777

I have read and understood the above consent form and desire of my own free will to participate in this study.

- ○ Yes
- ○ No

Block 1

1. In terms of your teacher preparation program (traditional or alternative), which of the following aspects of teaching agriculture did you feel **MOST** prepared for? *Please rate the following items on*

a scale from Strongly Disagree to Strongly Agree

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Teaching Multicultural Students	○	○	○	○	○
Teaching Wildlife	○	○	○	○	○
Teaching Forestry	○	○	○	○	○
Differentiated Instruction	○	○	○	○	○
Networking	○	○	○	○	○
Time Management in and out of Classroom	○	○	○	○	○
Completing Duties that take Place Outside Class Time	○	○	○	○	○
Understanding Complexities of Being an Agriculture Teacher	○	○	○	○	○
Teaching High-Level Concepts	○	○	○	○	○
Teaching FFA	○	○	○	○	○
Teaching Horticulture	○	○	○	○	○
Inquiry-Based Learning	○	○	○	○	○
Basic Agricultural Mechanics	○	○	○	○	○
Classroom Management	○	○	○	○	○

Please feel free to include any additional comments, suggestions, or items you believe should be added to this list

Block 2

2. In terms of your teacher preparation program (traditional or alternative), what aspects of teaching agriculture did you feel **LEAST** prepared for? Please rate the following items on a scale from Strongly Disagree to Strongly Agree

(Ex: I was LEAST prepared for Agricultural Mechanics; therefore, I would mark "Agree" or "Strongly Agree")

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Managing a Chapter with a Classroom	○	○	○	○	○

Following a Textbook/Approved Outline (As a primary teaching tool)	○	○	○	○	○
Management of Laboratory Area	○	○	○	○	○
Agricultural Mechanics	○	○	○	○	○
Classroom Management	○	○	○	○	○
Career Preparation	○	○	○	○	○
Teaching FFA	○	○	○	○	○
Communicating with Parents	○	○	○	○	○
Workload	○	○	○	○	○
Differentiated Instruction	○	○	○	○	○
Communicating with Administration	○	○	○	○	○
Time Management	○	○	○	○	○
Recruitment of Diverse Students	○	○	○	○	○
Teaching SAEs	○	○	○	○	○
Communicating with Teaching Partner(s)	○	○	○	○	○
Management of Equipment	○	○	○	○	○
Managing a Greenhouse	○	○	○	○	○

Question 2 Continued: "In terms of your teacher preparation program (traditional or alternative), what aspects of teaching agriculture did you feel **LEAST** prepared for?"

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Certification Requirements	○	○	○	○	○
Dealing with Finances	○	○	○	○	○
Filling out Applications (such as Proficiencies and State Degrees)	○	○	○	○	○
Planning Activities for Topics Taught	○	○	○	○	○
Record-Keeping	○	○	○	○	○
Teacher Evaluations (By Principals, Administrators, etc.)	○	○	○	○	○
Importance of Marketing the Agriculture Program	○	○	○	○	○
Following Approved Course Outlines (Approved by the School)	○	○	○	○	○
Renewal Processes	○	○	○	○	○
Working with Special Needs Students	○	○	○	○	○
Making Lessons Hands-On	○	○	○	○	○
Scheduling Lessons	○	○	○	○	○

Laboratory Courses	○	○	○	○	○
How Reimbursement Funding Works	○	○	○	○	○
Teaching Methodology	○	○	○	○	○
Paperwork	○	○	○	○	○

Please feel free to include any additional comments, suggestions, or items you believe should be added to this list

Block 3

3. What would you have liked to have known more about before becoming an agriculture teacher? Please rate the following items on a scale from Strongly Disagree to Strongly Agree

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Agricultural Mechanics	○	○	○	○	○
Meat Science	○	○	○	○	○
Methods of Organization	○	○	○	○	○
Livestock Handling	○	○	○	○	○
Career Preparation	○	○	○	○	○
Working with the Community	○	○	○	○	○
Small Engines	○	○	○	○	○
Professional Organizations and Resources Available	○	○	○	○	○
Working with other Teachers	○	○	○	○	○
Greenhouse Operations	○	○	○	○	○

Question 3 Continued: "What would you have liked to have known more about before becoming an agriculture teacher?"

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Record-Keeping	○	○	○	○	○
Myself as a Teacher (Teaching Identity)	○	○	○	○	○

Classroom Managment	○	○	○	○	○
What it Takes to Have a Successful Agriculture Education Program	○	○	○	○	○
How to Follow Course Outlines	○	○	○	○	○
Utilizing Prepared Materials (such as textbooks/workbooks)	○	○	○	○	○
Curriculum Development	○	○	○	○	○
How to keep FFA from Overshadowing Classroom Instruction	○	○	○	○	○
Paperwork	○	○	○	○	○
Content Delivery	○	○	○	○	○
Proficiency Awards	○	○	○	○	○

Please feel free to include any additional comments, suggestions, or items you believe should be added to this list

APPENDIX D

PRE-NOTICE EMAIL

From: John Rayfield [jrayfield@tamu.edu]
Sent: Friday, August 29, 2014 7:30 AM
To: [First Name, Last Name]
Subject: Your Expertise is Needed in this Research Study!

Howdy!

You have been chosen to take part in a research study being conducted by Dr. John Rayfield and Lockie Breeding, Masters of Science graduate student in the Department of Agricultural Leadership, Education, and Communications at Texas A&M University.

The purpose of this study is to determine specific experiences that early career agriculture teacher award winners believe to be pertinent to their success as a teacher, FFA advisor, and SAE supervisor. This questionnaire is the first round of a three-round study. This particular questionnaire consists of 5 short open-ended questions and 9 demographic-types questions related to your career as an agriculture teacher. This questionnaire should take you no more than 10-15 minutes to complete.

The answers you provide are incredibly important to creating a better understanding of what experiences are needed to prepare early career agriculture teachers. You will be receiving the link to our questionnaire on Tuesday, September 2nd, so keep a look out for it in your email.

We really appreciate your time in helping us with this study! If you have any questions regarding this study, please feel free to contact me, Lockie Breeding, at (979) 458-7983 or lockie.breeding@ag.tamu.edu, or Dr. John Rayfield at (979) 862-3707 or jrayfield@tamu.edu.

Thanks you so much again for your help,

Dr. John Rayfield and Lockie Breeding

APPENDIX E

PRE-NOTICE EMAIL ROUND TWO

From: John Rayfield [jrayfield@tamu.edu]
Sent: Friday, October 10, 2014 7:30 AM
To: [First Name, Last Name]
Subject: Your Expertise is Needed in this Research Study!

Howdy!

We have received a lot of **great** feedback from the first round of the study Experiences Needed to Prepare Early Career Agriculture Teachers! Thank you **SO MUCH** to those of you who contributed to the first round! We have now compiled your answers from the first survey and formed questions for the second survey you will be receiving next week. For those of you who were unable to add your input to the first round, have no fear! We would still love for you to participate in the second round.
This questionnaire is the second round of a three-round study. In this round you will be asked to rate your level of agreement with each statement that we compiled from the first round.

This should take you no more than 10-15 minutes to complete.

Once again, you were chosen for this study because you won the NAAE Outstanding Young Member award as an early career agriculture teacher. The answers you provide in this study are incredibly important for creating a better understanding of what experiences are needed to prepare early career agriculture teachers. You will be receiving the link to the second round survey on **Monday, October 13**, so keep a look out for it in your email.

We really appreciate your time in helping us with this study! If you have any questions regarding this study, please feel free to contact me, Lockie Breeding, at (979) 458-7983 or lockie.breeding@ag.tamu.edu, or Dr. John Rayfield at (979) 862-3707 or jrayfield@tamu.edu.

Thanks you so much again for your help,

Dr. John Rayfield and Lockie Breeding

APPENDIX F

PRE-NOTICE EMAIL ROUND THREE

From: John Rayfield [jrayfield@tamu.edu]
Sent: Friday, November 14, 2014 7:30 AM
To: [First Name, Last Name]
Subject: Your Expertise is Needed in this Research Study!

Howdy!

Thank you **SO MUCH** for your wonderful input in the first two rounds of the study Experiences Needed to Prepare Early Career Agriculture Teachers! Guess what?! This is the **FINAL ROUND** of this study! Whoop! You've made it! Seventeen items from round two have already reached consensus and thus will not be included in this round. For those items that did not reach consensus in the second round, you will be asked to re-evaluate the statements and rate your level of agreement of each item in the third round.

This should take you no more than 10-15 minutes to complete.

Once again, you were chosen for this study because you won the NAAE Outstanding Young Member award as an early career agriculture teacher. The answers you provide in this study are incredibly important for creating a better understanding of what experiences are needed to prepare early career agriculture teachers. You will be receiving the link to the third and final round survey on **Monday, November 17th**, so keep a look out for it in your email.

We really appreciate your time in helping us with this study! If you have any questions regarding this study, please feel free to contact me, Lockie Breeding, at (979) 458-7983 or lockie.breeding@ag.tamu.edu, or Dr. John Rayfield at (979) 862-3707 or jrayfield@tamu.edu.

Thanks you so much again for your help,

Lockie Breeding and Dr. John Rayfield

APPENDIX G

ROUND ONE RAW DATA

1. **In terms of your teacher preparation program, what aspects of teaching agriculture did you feel MOST prepared for? (47 Statements)**

    - Writing lesson plans
    - Knowledge of industry/subjects
    - Inquiry-based learning
    - Creation of curriculum
    - Teaching high-level concepts
    - Knowledge of subject matter
    - Curriculum Development
    - Classroom Management
    - Differentiation
    - Teaching multi-cultural students
    - Basics of AGED methods
    - Classroom instruction
    - Teaching animal science
    - Had heck of a network
    - Classroom management
    - Building a lesson
    - Develop lesson/units from scratch
    - Knew content and material I'd be teaching
    - Understood science concepts
    - Lesson planning
    - Teaching FFA
    - Planning in general
    - Teaching in general
    - Comfortable with Animal Science
    - Basic Ag Mechanics
    - Foundational Skills of Teaching
    - Exposure to variety of programs across state
    - Lesson planning
    - Curriculum Design
    - Classroom Management

- Introduction type lesson/very basic units/info
- Teaching Horticulture content
- Teaching Horticulture curriculum
- Teaching Forestry
- Teaching Wildlife
- Networking with fellow teachers
- Little knowledge of FFA
- Content Delivery
- Time Management in and out of classroom
- Understood complexities of being an ag teacher
- Completing duties that take place outside class time
- Lesson planning
- Teaching
- Pedagogy
- Teaching strategies
- Differentiation
- Writing lesson plans

Categories

- **Content Knowledge: 13**
  - Knowledge of industry/subjects
  - Knowledge of subject matter
  - Teaching animal science
  - Knew content and material I'd be teaching
  - Understood science concepts
  - Comfortable with Animal Science
  - Basic Ag Mechanics
  - Teaching Horticulture content
  - Teaching Horticulture curriculum
  - Teaching Forestry
  - Teaching Wildlife
  - Teaching FFA
  - A little knowledge of FFA
- **Classroom Instruction: 12**
  - Inquiry-based learning
  - Teaching high-level concepts
  - Basics of ag ed methods

    - Classroom instruction
    - Teaching in general
    - Foundational Skills of Teaching
    - Content Delivery
    - Teaching
    - Teaching Strategies
    - Differentiation
    - Teaching Multi-cultural student
    - Differentiation
- **Developing curriculum/lessons: 11**
    - Writing lesson plans
    - Creation of curriculum
    - Curriculum Development
    - Building a lesson
    - Develop lesson/units from scratch
    - Lesson planning
    - Lesson planning
    - Curriculum Design
    - Lesson planning
    - Writing lesson plans
    - Planning in general
- **Other: 7**
    - Had heck of a network
    - Exposure to variety of programs across state
    - Introduction type lesson/very basic units/info
    - Networking with fellow teachers
    - Time Management in and out of classroom
    - Understood complexities of being an ag teacher
    - Completing duties that take place outside class time
- **Classroom Management: 4**
    - Classroom Management
    - Classroom Management
    - Classroom Management
    - Pedagogy

2. In terms of your teacher preparation program, what aspects of teaching agriculture did you feel LEAST prepared for? (56 Statements)

- Dealing with parents
- Variety of instructional strategies
- Handling discipline problems
- Communicating with administration
- Managing a greenhouse
- FFA
- Dealing with special education students
- Classroom Management
- Managing a chapter with a classroom
- SAEs
- Career Prep.
- Managing time
- Workload
- Ag. Mechanics
- Recruitment of diverse students
- Balancing the life of an agriculture teacher
- Data Analysis
- SAEs
- Record-keeping
- Putting together 5 preps per day
- FFA dominates you if you let it
- Workload of an ag teacher (You're more than a teacher…)
- Importance of marketing a program
- Paper work associated with the profession
- Reimbursement funds (how they work)
- Following a textbook/approved outline (utilizing textbooks as primary teaching tool)
- Politics of education
- Dealing with parents
- Dealing with administrators
- Filling out paperwork
- Classroom management
- Some specific content within agriculture
- Work-life balance
- Maintenance/management of lab area/equipment

- Manage greenhouse (on a set amount of $; daily care is a challenge to ensure proper care
- Differentiated instruction
- Certification requirements
- Renewal processes
- Evaluations
- Retirement
- Working with a co-teacher
- Ag mechanics
- Scheduling lessons
- Handling student behavior
- Teaching SAE
- Teaching FFA
- Classroom Management
- Paperwork
- Planning activities for topics taught (making lessons hands-on)
- Discipline in the classroom
- Dealing with finances
- Dealing with paperwork like proficiencies and state degrees
- Time management
- Lab courses
- Working with special needs students (especially in lab settings
- Teaching methodology

Categories

- **Content Knowledge: 13**
  - FFA
  - SAEs
  - Career Prep
  - Ag. Mechanics
  - SAEs
  - FFA dominates you if you let it
  - Some specific content within agriculture
  - Ag. Mechanics
  - Teaching FFA
  - Teaching SAE

    - Managing a greenhouse
    - Maintenance/management of lab area/equipment
    - Manage greenhouse (on a set amount of $; daily care is a challenge to ensure proper care
- **Time Management/Work-Life Balance: 8**
    - Managing time
    - Workload
    - Balancing the life of an ag. Teacher
    - Workload of an ag teacher (You're more than a teacher…)
    - Work-life balance
    - Time Management
    - Managing a chapter with a classroom
    - Putting together 5 preps per day
- **Classroom Instruction: 7**
    - Variety of instructional strategies
    - Following a textbook/approved outline (utilizing textbooks as primary teaching tool)
    - Differentiated instruction
    - Scheduling lessons
    - Planning activities for topics taught (making lessons hands-on)
    - Teaching methodology
    - Lab Courses
- **Communication (Parents, Administration, etc.): 6**
    - Dealing with parents
    - Communicating with administration
    - Politics of education
    - Dealing with parents
    - Dealing with administrators
    - Working with a co-teacher
- **Classroom Management: 6**
    - Handling discipline problems
    - Classroom Management
    - Classroom Management
    - Classroom Management
    - Discipline in the classroom
    - Handling student behavior
- **Job Basics: 6**
    - Reimbursement funds (how they work)

    - Certification requirements
    - Renewal processes
    - Evaluations
    - Retirement
    - Dealing with finances
- **Paperwork: 5**
    - Record-keeping
    - Paper work associated with the profession
    - Filling out paperwork
    - Paperwork
    - Dealing with paperwork like proficiencies and state degrees
- **Handling Diverse Populations: 3**
    - Dealing with special education students
    - Recruitment of diverse students
    - Working with special needs students (especially in lab settings)
- **Other: 2**
    - Data Analysis
    - Importance of marketing a program

3. What would you have liked to have known more about before becoming an agriculture teacher?(50 Statements)

- Know more about myself as an educator (Teaching identity)
- Time spent in career
- What it takes to have a successful program
- Hours
- Stress
- FFA is not all of ag ed and should be equal to classroom
- Importance/how-to's of SAEs
- Importance/how-to's of Career Prep
- Work-life balance
- Ag. Mech.
- Ways programs across state meet requirements
- Content Delivery
- Curriculum development
- Ag. Mech. Large project construction
- Small Engines

- Livestock Handling
- Meat Science
- Greenhouse Operations
- Record keeping
- Wish would've had curriculum with labs ready to implement day I took a job
- Time management strategies
- How to follow course outlines/utilize prepared materials like textbook/workbook
- Making contacts in communities
- How to identify community resources
- Time management
- Work/life balance
- How school districts run
- Politics of education
- More content
- Proficiency awards
- Navigating challenging co-workers
- Work/life balance
- Time commitment
- Dealing with administrators
- Everything
- Curriculum Development
- Professional organizations and resources available to me
- Classroom Management
- Paperwork
- Running a total ag ed program
- Cross-curricular planning (including core areas)
- Working with the community
- Working with parents
- Working with other teachers
- Small engines
- Lab pedagogy
- How to say "NO"
- Time management
- Utilizing community members

- Methods of time management/organization

Constructs

- **Work-life balance: 11**
  - Time spent in career
  - Hours
  - Work-life balance
  - Time management strategies
  - Time management
  - Work/life balance
  - Work/life balance
  - Time commitment
  - Time management
  - Methods of time management/organization
  - Stress
- **Communication (Parents, Administration, etc.): 10**
  - Making contacts in communities
  - How to identify community resources
  - Politics of education
  - Navigating challenging co-workers
  - Dealing with administrators
  - Professional organizations and resources available to me
  - Working with the community
  - Working with parents
  - Working with other teachers
  - Utilizing community members
- **Content Knowledge: 10**
  - Importance/how-to's of SAEs
  - Importance/how-to's of Career Prep
  - Ag. Mech.
  - Ag. Mech. large project construction
  - Small Engines
  - Livestock Handling
  - Meat Science
  - Greenhouse Operations
  - More content
  - Small engines

- **Curriculum Development: 5**
    - Curriculum development
    - Wish would've had curriculum with labs ready to implement day I took a job
    - How to follow course outlines/utilize prepared materials like textbook/workbook
    - Curriculum Development
    - Cross-curricular planning (including core areas)
- **Other: 5**
    - Know more about myself as an educator (Teaching identity)
    - Ways programs across state meet requirements
    - Content Delivery
    - How school districts run
    - Everything
- **Classroom Management: 3**
    - Classroom Management
    - Lab pedagogy
    - How to say "NO"
- **Having a Total Program: 3**
    - What it takes to have a successful program
    - FFA is not all of ag ed and should be equal to classroom
    - Running a total ag ed program
- **Paperwork: 3**
    - Record keeping
    - Proficiency awards
    - Paperwork

APPENDIX H

IRB APPROVAL LETTER

DIVISION OF RESEARCH

Research Compliance and Biosafety

TEXAS A&M UNIVERSITY

DATE: August 18, 2014

MEMORANDUM

TO: John Rayfield
ALRSRCH - Agrilife Research - Ag Leadership, Education & Communication

FROM: Dr. James Fluckey
Chair
Institutional Review Board

SUBJECT: Initial review Submission Approval

Study Number:	IRB2014-0450
Title:	Experiences Needed to Prepare Early Career Agriculture Teachers
Review Type:	Expedited
Approval Date:	08/18/2014
Continuing Review Due:	p7/15/2015
Expiration Date:	08/15/2015
Documents Reviewed and Approved:	Informed Consent (English) (Version 1.1) Recruitment Email (Version 1.0) 1st Round Questionnaire (Version 1.0)

Document of Consent: Waiver approved under 45 CFR 46.117 (c) 1 or 2/ 21 CFR 56.109 (c)1

This research project has been approved. As principal investigator, you assume the following responsibilities:

1. **Continuing Review:** The protocol must be renewed by the expiration date in order to continue with the research project. A Continuing Review application along with required documents must be submitted by the continuing review deadline. Failure to do so may result in processing delays, study termination, and/or loss of funding.
2. **Completion Report:** Upon completion of the research project (including data analysis and final written papers), a Completion Report must be submitted to the IRB.
3. **Unanticipated Problems and Adverse Events:** Unanticipated problems and adverse events must be reported to the IRB immediately.
4. **Reports of Potential Non-compliance:** Potential non-compliance, including deviations from protocol and violations, must be reported to the IRB office immediately.
5. **Amendments:** Changes to the protocol must be requested by submitting an Amendment to the IRB for review. The Amendment must be approved by the IRB before being implemented.
6. **Consent Forms:** When using a consent form or information sheet, you must use the IRB stamped approved version. Please log into iRIS to download your stamped approved version of the consenting instruments. If you are unable to locate the stamped version in iRIS, please contact the office.
7. **Audit:** Your protocol may be subject to audit by the Human Subjects Post Approval Monitor. During the life of the study please review and document study progress using the PI self-assessment found on the

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College Station, TX 77843-1186
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RCB website as a method of preparation for the potential audit. Investigators are responsible for maintaining complete and accurate study records and making them available for inspection. Investigators are encouraged to request a pre-initiation site visit with the Post Approval Monitor. These visits are designed to help ensure that all necessary documents are approved and in order prior to initiating the study and to help investigators maintain compliance.

8. **Recruitment:** All approved recruitment materials will be stamped electronically by the HSPP staff and available for download from iRIS. These IRB-stamped approved documents from iRIS must be used for recruitment. For materials that are distributed to potential participants electronically and for which you can only feasibly use the approved text rather than the stamped document, the study's IRB Protocol number, approval date, and expiration dates must be included in the following format: TAMU IRB#20XX-XXXX Approved: XX/XX/XXXX Expiration Date: XX/XX/XXXX.
9. **FERPA and PPRA:** Investigators conducting research with students must have appropriate approvals from the FERPA administrator at the institution where the research will be conducted in accordance with the Family Education Rights and Privacy Act (FERPA). The Protection of Pupil Rights Amendment (PPRA) protects the rights of parents in students ensuring that written parental consent is required for participation in surveys, analysis, or evaluation that ask questions falling into categories of protected information.
10. **Food:** Any use of food in the conduct of human subjects research must follow Texas A&M University Standard Administrative Procedure 24.01.01.M4.02.
11. **Payments:** Any use of payments to human subjects must follow Texas A&M University Standard Administrative Procedure 21.01.99.M0.03.

This electronic document provides notification of the review results by the Institutional Review Board.