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Iowa high school agriculture teachers’ motivations to teach, personal and professional needs, and career satisfaction in the teaching profession

by

Normala Ismail

A dissertation submitted to the graduate faculty

in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Major: Agricultural Education

Program of Study Committee:
Gregory Miller, Major Professor
   Michael Retallick
   David Acker
   Robert Martin
   Kenneth Koehler

The student author, whose presentation of the scholarship herein was approved by the program of study committee, is solely responsible for the content of this dissertation. The Graduate College will ensure this dissertation is globally accessible and will not permit alterations after a degree is conferred.

Iowa State University

Ames, Iowa

2018

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DEDICATION

I dedicated this dissertation to myself for all the hard work and challenges that I went through to make this happen.
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I would like to give special thanks to my parents, and my family for continuous support and encouragement throughout completing my dissertation.

Next, I would like to express my gratitude to my major professor, Dr. Greg Miller, for his support and excellent supervision in helping me throughout completing the dissertation. I would also like to thank my committee members, Dr. David Acker, Dr. Robert Martin, Dr. Michael Retallick, and Dr. Kenneth Koehler, for their guidance and encouragement throughout the research process.

I also want to express my appreciation to those who participated in my research. Your help by participating in the survey made this thesis possible.

Lastly, I would like to thank my best friends, colleagues, and the department academic staff for making the best time of my educational career at Iowa State University.
ABSTRACT

The purpose of this study was to determine the factors that influence high school agriculture teachers’ motivations to teach, personal and professional needs that influence high school agriculture teachers’ intentions to continue teaching, and career satisfaction of high school agriculture teachers. This was a descriptive census survey study of all high school agriculture teachers in Iowa. The study addressed three objectives: 1) Describe the factors that motivate high school agriculture teachers to teach; 2) Describe the personal and professional needs that influence high school agriculture teachers’ intentions to continue teaching; and 3) Evaluate the career satisfaction of high school agriculture teachers.

The online validated questionnaire was sent to teachers in Iowa ($N = 252$) via Qualtrics. Completed questionnaires were received from 119 participants. A four-point Likert-type scale with response options ranging from 1 = strongly disagree to 4 = strongly agree was used to measure teachers’ motivation factors, personal and professional needs to continue teaching, and career satisfaction for teachers to stay in teaching.

Findings indicated intrinsic and extrinsic factors most likely influenced agriculture teachers’ motivation to teach. Results from maximum likelihood factor analysis found only two factors underlying agriculture teachers’ motivations to teach, which are intrinsic and extrinsic motivational factors. Findings from this study support the Self-Determination Theory.

Furthermore, the findings revealed that personal and professional needs variables slightly influenced teachers’ intentions to continue teaching. Multinomial stepwise
logistic regression was used to predict teachers’ plans to stay in teaching from personal and professional needs variables, which showed the model was statistically significant ($\chi^2 = 39.97; p = 0.01$). Two variables: feeling good of oneself and identifying teaching as a right career significantly predict teachers who planned to stay more than 11 years.

In addition, multinomial stepwise logistic regression was used to predict teachers’ plans to stay in teaching from career satisfaction variables in teaching and demographic characteristics, which showed that the model was statistically significant ($\chi^2 = 27.51; p < 0.00$). Looking forward to continue teaching and years of teaching experience were significant predictors of teachers’ plan to stay in teaching more than 11 years. Further analysis of years of teaching experience found a substantial proportion of late-career teachers (>16 years of teaching experience) planned to teach for one to five years, whereas mid-career teachers (>6 years of teaching experience) planned to stay for 11 or more years. Substantial proportion of early-career teachers planned to teach less for 11 or more years. Findings from the study supported the Chapman model, Grissmer & Kirby’s theory, and were consistent with previous studies.
CHAPTER I
GENERAL INTRODUCTION

Background and Setting

Teaching as a career is often perceived as a valuable service of moral worth (Lortie, 1975; Joseph & Green, 1986). Although, teaching is positively perceived as having high social status, the teaching profession in the United States has become complex. Issues pertaining to the teacher workforce, shortage, attrition, recruitment, and retention have affected the industry. Teacher attrition refers to early retirement and resignation of teachers, which will have a significant effect on the teacher shortage. The data from several studies on teacher attrition shows a significant number of qualified teachers’ will quit teaching early in their career. Weiss (1999) reported that 40% of teachers in the United States quit teaching within their first two years.

The lack of teachers led to an imbalance in the student-teacher ratio. The National Center for Education Statistics (2017) reported that public schools would need to hire 3.2 million teachers to maintain a student-teacher ratio at 16:1. Thus, recruitment of enough teachers and retention of qualified teachers is necessary. In support of recruiting and retaining enough teachers, the National Education Association (2017) put the research spotlight on teacher recruitment and retention. The aim of retention is to ensure having enough highly qualified and effective teachers.

Studies of teacher retention have been conducted in agricultural education (Mundt & Connors, 1999; Myers, Dyer, & Washburn, 2005; Kitchel, Smith, Henry, Robinson, Lawver, Park, & Schell, 2012). The teacher shortage in agricultural education is reported on less often.
than other fields, such as mathematics, English and special education. In the past two
decades, the National Study of Supply and Demand in Agricultural Education shows that the
trends of agriculture teachers who left teaching and the number of teachers needed in the
profession from 1998 until 2017 were unstable and fluctuated. Data from the study reported
approximately 70 teachers were needed but not available in 1998, as well as in 2001. More
than 150 teachers were needed but not available in 2004, 30 teachers were needed but not
available in 2014, and approximately 80 teachers were needed but unavailable to fulfill the
vacancies in 2016 and 2017 (Camp, 2000; Camp, Broyles, & Skelton 2002; Kantrovich,
2007; Kantrovich, 2010; Foster, Lawver & Smith, 2014; Smith, Lawver, & Foster, 2016;
Smith, Lawver, & Foster, 2017). Addressing the issue of agriculture teacher retention is
significant at the national level (Kantrovich, 2010). Consequently, more research on
agriculture retention is needed.

The analysis from the supply and demand studies created an awareness of the teacher
shortage and the needs for certified agriculture teachers to meet a demand in School-Based,
Agricultural Education (SBAE). An insufficient supply of qualified teachers may negatively
affect students’ performance (Rockoff, 2004).

Previous research shows the teacher characteristics that influence teachers to stay in
the teaching career are: gender, intellectual ability, teachers’ beliefs, values, and attitudes
(Allen, 2005). In addition to this, Lock (2006) asserted personal factors, occupational
information, and environmental factors influence people to select a career. Examples of
personal factors are motivations, intentions, and satisfaction about the job. An example of
occupational information includes career prospects while examples of environmental factors
are external influences such as family, pay scales, compensation, friends, and schools.
Understanding interests and reasons for teachers to be involved in a teaching career is crucial in explaining their commitment and credibility to the profession.

Agriculture teachers that remain in teaching longer will likely gain more skills and experiences, becoming more competent and effective teachers. Clearly, staffing qualified and effective teachers has been a high priority for schools. It is important to have sufficient agriculture teachers that have a high commitment to teaching. Day (2008) proposed more research should be focused on teacher’s commitment, motivations, and effectiveness of retention efforts. However, few studies have investigated reasons and factors for agriculture teachers to remain in teaching. Thus, this study aims to examine the factors that motivate high school agriculture teachers to teach, personal and professional needs that influencing high school agriculture teachers’ intentions to continue teaching, and career satisfaction for high school agriculture teachers in the teaching profession.

**Statement of Problem**

The past four decades have seen a growing concern towards the issues of teacher retention in the United States (Ingersoll, 2001). Teaching is a demanding profession in agricultural education. However, many teachers choose to leave the career for many reasons besides retirement. Several strategies have been carried out to increase teacher retention such as the National Teach Ag Campaign, student loan forgiveness, scholarship programs, and professional development programs such as the Leadership for Retention [XLR8] program (NAAE, 2018; Smalley & Smith, 2017). As the economy progresses, it is difficult to keep agriculture teachers in the profession because they have more opportunities to choose other careers. The issue of teacher retention is significant (Hull, 2004) due to the high costs for
teacher replacement (Hughes, 2012). The United States allocates $2.2 billion for the national teacher replacement (Borman & Dowling, 2006); however, approximately $7.3 billion is needed to recruit, hire, and train new teachers (National Commission on Teaching America’s Future, 2017). Staffing qualified and effective teachers in schools has been a high priority. Thus, it is crucial to afford agriculture teachers with excellent areas of expertise, content knowledge, teaching experience, and a high commitment in teaching. Further, Ingersoll (2003) mentioned that retaining teachers is better than recruiting new teachers.

In order to improve retention in agricultural education, it is important to understand what influences agriculture teachers to remain in teaching. Several studies have been conducted to determine the factors that lead to teacher retention such as teachers’ characteristics, teaching experience, perception about teaching, teachers’ motivation, and professional development of agricultural educators (Warnick, Thompson & Tarpley, 2010; Crutchfield, Ritz, Burris, 2013; Touchstone, 2015; Meyer, Holt-Day, Steede & Meyers, 2017; Smalley & Smith, 2017).

A few studies have been carried out that focused on high school agriculture teacher retention. However, no study comprehensively addressed intrinsic, extrinsic, and altruistic motivational factors to teach, personal and professional needs to continue teaching, and career satisfaction in the teaching career among high school agriculture teachers in Iowa.

**Purpose & Objectives of Study**

The purpose of this study was to determine the factors that influence high school agriculture teachers’ motivations to teach, personal and professional needs that influence
teachers’ intentions to continue teaching and career satisfaction for teachers in the teaching profession. The study addresses three important objectives:

1. Describe the factors that motivate high school agriculture teachers to teach.
2. Describe the personal and professional needs that influence high school agriculture teachers’ intentions to continue teaching.
3. Evaluate the career satisfaction of high school agriculture teachers in the teaching profession.

**Significance of the Study**

Agricultural education is facing a teacher shortage problem. The National Agricultural Supply and Demand study reported more agriculture teachers are needed to meet the demand (Smith, Lawver, & Foster, 2017). Research on factors that motivate teachers to teach, what needs influences teachers’ intentions to continue teaching, and teachers’ career satisfaction to remain in the teaching profession will help high school agriculture teachers, school administrators, and local boards of education to create a better teacher retention solution. No other study has addressed these factors on teacher retention. The current findings could help fill a gap in the literature by studying motivational factors to teach (intrinsic, extrinsic, and altruistic), personal and professional needs that influence teachers’ intentions to continue teaching, and career satisfaction in teaching.

**Limitations**

There were a few limitations of this study. Limitations of the study are influences that are beyond the researcher’s control. First, this census study used a population of 252 high
school agriculture teachers in Iowa. The list of teachers was obtained from the Iowa FFA directory. The researcher was aware that the list of teachers might be incomplete or inaccurate in some cases. However, the list from the Iowa FFA directory provided the best available contact information for high school agriculture teachers in Iowa.

In addition, the instrument was a questionnaire that was distributed using the online Qualtrics system. This method is flexible and effective for the researcher, but has not generated high response rates from teachers. Next, the reader should note that the findings from this study were suitable to generalize for high school agriculture teachers in Iowa. The results from the study should be assessed appropriately before being generalized to high school agriculture teachers in other states.

**Assumptions**

Participants in the study are assumed to answered the questionnaire honestly and factually. Agriculture teaching is recognized as a professional career, and the researcher assumed honest responses.

**Delimitations**

The population used in the study was delimited only to high school agriculture teachers across Iowa. In addition, this research was confined to three important major constructs: motivational factors (intrinsic, extrinsic, and altruistic), personal and professional needs that influence teachers’ intentions to continue teaching, and career satisfaction in teaching profession.
Definition of Terms

Motivations to teach
Throughout the dissertation, the use of motivation to teach refers to the drive for agriculture teachers that influences them to teach. Motivation to teach shows individual motives that explain the behavior (Dictionary of Behavioral Sciences, 1989). In this study, the motivations to teach consist of three components: intrinsic, extrinsic, and altruistic.

Intrinsic Motivation
In the literature, the intrinsic motivation term describes an individual’s interest in doing enjoyable activities (Ryan & Deci, 2000; Hardre & Reeve, 2003; Reeve, Deci & Ryan, 2004). The intrinsic motivation used in this study refers to agriculture teachers’ feelings, desires, and incentives that originate within the behavior itself (Dictionary of Behavioral Sciences, 1989).

Extrinsic Motivation
In broad terms, the extrinsic motivation term denotes external rewards received by an individual. In this study, the extrinsic motivation definition is the motivation that stems from positive or negative external reinforcement of agriculture teachers (Dictionary of Behavioral Sciences, 1989).

Altruistic Motivation
Numerous definitions are used to describe altruistic motivation, yet a precise meaning of this motivation remains elusive. Previous literature defined altruistic motivation, as a behavior performed voluntarily that must be a goal for itself and performed without expecting any external reward (Bar-Tal, 1976; Berkowitz, 1972; Krebs, 1970; Leeds, 1963 & Staub, 1978). The term of altruistic motivation in the present study denotes an agriculture teacher’s
behavior that is performed to benefit another person, and intentionally or voluntarily performed without expecting any rewards from it.

**Personal and Professional Needs that Influence Teachers’ Intentions to Continue Teaching**

Personal and professional needs that influence teachers’ intentions to continue teaching address teachers’ agreement whether their needs are met from teaching or not.

**Career Satisfaction**

The term career satisfaction refers to agriculture teachers’ feeling of gratification with their progress they have in the teaching profession.

**Teacher Retention**

The term teacher retention in this study refers to agriculture teachers who remain in teaching continuously year after year.

**Iowa Association of Agricultural Educators**

The term Iowa Association of Agricultural Educators is used to refer to the organization where professionals in agricultural education value and build a network for professional development and program articulation (Iowa Association of Agricultural Educators, 2017).

**SBAE teacher**

The term school-based agricultural education (SBAE) teacher in the study refers to agriculture teachers who teach and disseminate knowledge of agriculture, food, and natural resources for students from seventh grade through 12th grade (Phipps, Osborne, Dyer, & Ball, 2008 & Eason, 2014).

**CASE curriculum**

In the current study, CASE is defined as Curriculum for Agricultural Science Education. CASE curriculum functions as a teaching aid for the agriculture teacher to deliver systematic
instruction in agriculture with a focus on learning by doing (Curriculum for Agricultural Science Education, 2016).

**National Association of Agricultural Educators (NAAE)**

A national professional organization for people in school-based, agricultural education. This organization is responsible for planning, promoting and managing agricultural education, professional development, teacher recruitment, and retention.

**Dissertation Organization**

The dissertation is organized into six chapters. Chapter One encompasses the background and setting, the problem statement, the purpose and objectives, the limitations and assumptions, and the definitions of terms used in the study.

Chapter Two presents the review of the literature, construction of the conceptual framework and a discussion of the theories that apply to this research.

Chapter Three presents the first article that addresses the first research objective, which is to describe the factors that motivate high school agriculture teachers to teach.

Chapter Four includes the second article that addresses the second objective, which is to describe the personal and professional needs that influence high school agriculture teachers’ intentions to continue teaching.

Chapter Five of the dissertation is the last article that addresses the final objective, which is to evaluate the career satisfaction of agriculture teachers in the teaching profession.

Finally, Chapter Six of the dissertation discusses the general conclusions and provides several recommendations for practice and future research.
References


CHAPTER II
LITERATURE REVIEW

Introduction

This chapter presents a review of the literature on factors that motivate teachers to teach, personal and professional needs that influence teachers’ intentions to continue teaching, career satisfaction in teaching, and how long teachers plan to stay in teaching.

The review provided a foundation of knowledge and discussed the theories and the conceptual framework used in the study. Previous theories and empirical evidence published from 1963 to 2017 are reviewed. The researcher reviewed multiple journals including the *Journal of Agricultural Education, Research in Higher Education, Journal of Educational Psychology, Journal of Career and Technical Education, and Teaching and Teacher Education*.

The issues of teacher retention not only occur in core education such as mathematics, English, special education, and career and technical education (Joerger & Bremer, 2001) but also in agricultural education (Reilly & Welton, 1980; Connors, 1998; Delnero & Montgomery, 2001; Crutchfield et al. 2013; Roness, 2011; Smalley & Smith, 2017). A report from the National Agricultural Education Supply and Demand Study (2016) showed that school-based, agriculture education teachers (SBAE) left a teaching career due to retirement, switching careers to business or industry, being terminated, or for other reasons. With an increasing trend of agriculture teachers departing the profession, it is crucial to understand the factors that impel them to remain in the teaching career.
Motivation to teach: Intrinsic, Extrinsic, and Altruistic

One of the reasons that teachers remain in teaching is due to the motivations that drive them to teach. When teachers feel they are encouraged to work, they become inspired to act as energetic and motivated teachers (Ryan & Deci, 2000). Previous studies in the United Kingdom, Australia, Europe, Asia, as well as the United States investigated the reasons people choose a teaching career and factors that motivate them to persevere (Richardson & Watt, 2005). Important motivational factors include: intrinsic, extrinsic and altruistic motivations (Kyriacou, Hultgren, & Stephens, 1999; Moran, Kilpatrick, Abbott, Dallat, & McClune, 2001; Richardson & Watt, 2006).

In this study, intrinsic motivation can be defined as an incentive that originates within the behavior itself rather than externally. Extrinsic motivation is a motivation that stems from positive or negative reinforcements, which are external to the behavior itself rather than inherent in it (Dictionary of Behavioral Science, 1989). Altruistic motivation is defined as a benefit related to a goal and should be performed without expecting any external reward (Bar-Tal, 1976; Berkowitz, 1972; Krebs, 1970; Leeds, 1963 & Staub, 1978).

Motivation varies between individuals due to the amount of motivation possessed by them (Ryan & Deci, 2001).

Examples of intrinsic motivations include interest, interpersonal-based orientation, opportunity for a creative or challenging occupation, and opportunity for lifelong learning. Meanwhile, material benefits, job security, benefit and convenience based orientations, monetary rewards, and favorable working conditions are examples of extrinsic motivations. Unlike extrinsic and intrinsic motivations, examples of altruistic motivations are
service-based orientations such as a desire to work with children or adults, contribution to
society, and servicing mankind (Ferrel & Daniel, 1993).

Numerous studies have investigated teachers’ motivation to teach, (Hellsten and
Prytula, 2011) as well as how these motivations influence teachers’ intentions to continue
teaching (Dinham & Scott, 1997; Ashideu & Scott-Ladd, 2012; & Rice, Verge, & Gartin,
2011). The findings show that intrinsic motivations are important for teachers who plan to
continue teaching (Ashideu & Scott-Ladd, 2012). In addition to this, the findings show that
teachers express intrinsic motivations to teach by claiming that teaching is a fulfilling career

In another study, research found that a combination of intrinsic and altruistic
motivations become the most important factors for early-career teachers to teach (Brookhart
& Freeman, 1992). Brown (1992) found that first year teachers choose teaching for the
reason of altruistic motivations, while Hellsten and Prytula (2011) found early-career
teachers were motivated to teach for intrinsic motivations such as teaching their favorite
subject matter. Therefore, the motivations that influence people to teach are likely to change
over time.

Roness (2011) found that the most important factor for teachers to teach depends
on altruistic motivations. The examples of altruistic motivations are making a difference,
working with younger generations, and service-based orientations (Ferrel & Daniel, 1993).
Similarly, the study from Sinclair (2008) showed that the reason people choose a teaching
job is because they love to make a difference for students.

Research in agricultural education has found that extrinsic motivations such as
having highly motivated students, a good classroom, and good laboratory conditions were
important for teachers to continue teaching (Rice, Verge & Gartin, 2011). The findings show that agriculture teachers possess more extrinsic motivation to teach at school due to massive responsibilities. This finding supported the statement from Greiman, Walker, and Birkenholz (2005) that indicated the structure of an agricultural education program requires teachers to have additional responsibilities in addition to teaching. The motivation to join the teaching profession may have significant impact on teachers’ behaviors. Therefore, it is crucial to understand these motivations since it likely has a connection with a teacher's long-term commitment to teaching.

**Reviews on Motivational Factors to Teach Theories**

Different theories exist in the literature regarding teacher motivation to teach including social cognitive theories, self-determination theory, achievement goal orientation theory, and expectancy value theory. Dörnyei (1996) stated the challenge of explaining these theories for teacher motivation research is due to many approaches in explaining motivation. All these theories have been widely applied to different teacher motivation studies related to pre-service and in-service teachers. However, only Self-Determination Theory (SDT) was discussed in detail in the present study because it was the most relevant in explaining teachers’ motivations to teach.

The Self-Determination Theory was developed in 1970 and has expanded from two significant researchers, Edward L. Deci and Richard M. Ryan. SDT assumes that human nature and development tends to follow the environment, assimilates new skills and knowledge, and integrates all these into a coherent psychological theory structure (Reeve, Deci, & Ryan, 2004; Ryan & Deci, 2000). As a psychological theory, SDT determines that
human behavior is a function of conscious or unconscious motives that organize it. Three areas further the SDT, which are psychological needs theory, cognitive evaluation theory, and organismic integration theory (Reeve, Deci & Ryan, 2004).

Cognitive evaluation theory explains how the social environment affects individual intrinsic motivation (Deci & Ryan, 1985). Organismic integration theory studies the occurrences of internalization and integration. Internalization is about … “how an individual transforms an externally prescribed regulation or value into an internally endorsed one, whereas integration refers to the experience in which an internalized regulation has been fully and coherently assimilated with one’s sense of self,” (Ryan & Deci, 2000a, 2000b, pp. 226). The organismic integration theory identifies four types of extrinsic motivation that includes external, introjected, identified, and integrated regulation. These extrinsic motivations are categorized by the degree of the motivation that has been internalized and integrated into an individual. Basic psychological needs theory is about individual psychological needs that focus on autonomy, competence, and relatedness.

SDT posits two important types of motivations: intrinsic and extrinsic motivation. Intrinsic motivation refers to inherent motivation whereas extrinsic motivation refers to social environments that either support or thwart the intrinsic motivation. Ryan & Deci (2000a) mentioned that intrinsic motivation refers to individual’s feeling of interest, enjoyment, and engagement by performing the activities. In contrast, extrinsic motivation refers to doing an activity to gain reward or evade a punishment. When an individual is intrinsically motivated in doing activities, they feel engaged in it. Their psychological needs are satisfied, and this makes them feel more competent.
Previous work in SDT shows that intrinsic motivation and extrinsic motivation are dependent on one another. Deci, Koestner and Ryan (1999) studies show that extrinsic motivation has a potential either to undermine or increase intrinsic motivation. Adding to this, Deci (1971) found that providing extrinsic rewards like monetary supplements decrease college students’ intrinsic motivations to learn. However, Deci (1971) found that positive feedback helps to increase intrinsic motivation. From these studies, it shows that intrinsic and extrinsic motivation tend to be interactive.

Internalization and integration were another important concept in SDT. The concept explains that when an individual feels secure, cared for, and important, the individual wants to internalize their knowledge (Wentzel & Miele, 2009). In SDT, this concept is widely applied to motivation and learning studies (Ryann, Connell, and Plant, 1990; Kage & Namiki, 1990; Katz, Assor, & Kanat–Maymon, 2008).

Self-Determination Theory (SDT) represents the interaction between human development and social conditions to understand various human motivation across different domains and disciplines. This makes SDT a good theory for action and intervention (Wentzel & Miele, 2009). Several studies have applied SDT to: factors influencing teacher motivation to teach, teacher motivation and effective teaching, teacher and student motivation, teacher motivation research across multiple disciplines, and a teacher motivation instrument (Han & Yin, 2016). Adding to this, SDT was also used to investigate workplace motivation strategies such as rewards, evaluations, incentives, and feedback systems (Gagné, Deci, & Ryan, 2017). Ryan and Brown (2005) revealed that the theory has great implications for educational practice and policies. Previous literature about SDT suggests that the theory is suited to study teachers’ motivation to teach.
Factors that Influence Teachers’ Intention to Continue Teaching

Previous research related to intention to continue teaching has been focused on teacher turnover (Battle & Looney, 2014; Wilhelm, Dewhurst–Savellis, & Parker, 2000; Inman & Marlowe, 2004; Borman & Dowling, 2006; Angelle, 2006; Curry & O’Brien, 2012).

In agriculture education, new teachers who face difficulties when entering the teaching profession might change their career or quit teaching. The belief about teaching as a worthwhile career might change when they face the realities of a teacher’s life (Goodlad, 1990). Walker, Garton, & Kitchel (2004) investigated secondary agriculture teachers’ intentions to remain in teaching and found teachers who stay in teaching were satisfied with their job and responsibilities. In addition, Tippens, Ricketts, Morgan, Navarro and Flanders (2013) found that the majority of agriculture teachers in the state of Georgia were happy with their job and intend to remain in teaching.

Darling-Hammond et al. (2002) mentioned several factors such as teacher sense of preparedness and self-efficacy that were important characteristics for teachers’ confidence and intentions to stay in teaching. Adding to this, Bandura (1977) mentioned that self-efficacy is a good predictor to measure people’s performance and choices. Thus, understanding teacher self-efficacy might help in explaining teachers’ plans to continue teaching.

In relation with teaching job characteristics, Greiman, Walker and Birkenholz (2005) stated that the structure of the agricultural education program required agriculture teachers to have additional responsibilities, which influence teachers’ personal and profesional needs in their early years of teaching.
In this study, novice teachers perceived teaching job characteristics negatively, which might influence their plans to keep teaching.

Despite prior evidence of how early teaching experience and self-efficacy influenced teachers to remain, previous studies revealed that teachers with good knowledge and skills are expected to stay longer in the teaching profession (Haberman, 1989; Darling-Hammond, 1990; Battle & Looney, 2014). Teachers with above average knowledge and skills, who stay longer in the profession, might help students perform better (Darling-Hammond, 2003). Teachers who stay longer in the teaching profession will gain knowledge, skills, and experiences that may eventually lead them to become more effective.

**Reviews on Teachers’ Intentions to Teach Theories**

Wigfield and Eccles (2000) researched and developed the expectancy-value theory and model that explains performance, persistence, and individual choice. Previous research found that the task value portion of this theory is useful to determine aspects that influence teachers’ plan to remain in teaching (Battle & Looney, 2014).

Eccles (1987) incorporated the concept of task value from the theory and used it in a model of educational and occupational choice. Battle & Wigfield (2003) and Eccles et al. (1983) mentioned that the concept of task valuing in the theory is suitable to predict intention. Therefore, the task value concept is appropriate to predict teachers’ intentions to remain teaching. The theory consists of the expectancies and subjective task value constructs, which are influenced by social cognitive variables. These constructs directly influence achievement–related choice in the model. Eccles (1983) studied the model and defined the expectancies as how well an individual performs the task immediately or within a specific
time to learn the task. The expectancies construct in the model focuses on the future abilities of an individual.

On the other hand, the subjective task value is comprised of utility, importance, and interest items. The task value measures how an individual applied the use of knowledge, was capability in the area, and interest in the job. Eccles et al. (1983) explained the task value as four important components: enjoying and engaging in activities, understanding the salience of the task, assuring future goals, and overcoming the fear of failure. Previous research reported the task value orientation construct in the theory has been applied to understand college women’s intentions to enter graduate education (Battle & Wigfield, 2003). Therefore, the task value from this theory is useful to predict teachers’ intentions to continue teaching (Battle & Wigfield, 2003; Eccles et al., 1983). The adaption of Expectancy Value Theory framework is graphically shown and described in Chapter 4.

**Reasons for Teacher To Stay**

The issues of teacher attrition and teacher shortage are impacting many countries including the United States. Teacher attrition refers to early retirement and resignation of teachers. The attrition rate is serious when about 20% to 50% of beginning teachers have departed from the teaching profession after five years or less of service (Hughes, 2012). Previous research reported that 20% of all kindergarten through 12th grade teachers in 1994 were no longer teaching after three years (Henke & Zahn, 2001). In addition, Ingersoll (2001) reported the rate of teacher turnover was 14% for teachers in the study of School Staffing Survey in the 1990s. Watt and Richardson (2008) mentioned that teacher shortage particularly occurred at schools in critical rural and urban areas. Ingersoll (2001) found that
the teacher shortage created school staffing problems and a failure to fulfill the needs created by an increasing student enrollment. Maintaining existing teachers will help to fulfill the needs. The National Center for Education Statistics (2011) projected that 300,000 teachers are needed each year; therefore, teacher retention is necessary.

Numerous studies attempt to explain the reasons for educators leaving teaching. Teachers perceived teaching as a challenging and demanding career (Myers, Dyer, & Washburn, 2015). Teachers also face many challenges such as insufficient teacher welfare, more workloads and less reward, lower salary, lack of prospects, isolating cultures, and high demand career expectations. These challenges will eventually cause teachers to perceive teaching as less attractive (Kyriacou, Kunc, Stephens & Hultgren, 2003; Greiman, Walker, & Birkenholz, 2005).

The National Agricultural Education Supply & Demand study reported agriculture teachers were needed to meet the demand in school-based, agriculture education (SBAE). In 2016, there were approximately 66 full-time positions that were left unfilled (Smith, Lawver, & Foster, 2017). Agriculture teachers left teaching for various reasons including: such as 1) not being offered contracts or being terminated; 2) employed in school administration; 3) left to pursue production agriculture or farming career; 4) hired in another educational content area; 4) became a stay at home parent; 5) moved out of the state; 6) continued education in graduate school; 7) health; 8) unknown; 9) employed in postsecondary education; and 10) employed in adult education.

A large and growing body of literature has investigated the reasons for teacher retention from 1990 to 2017 (Billingsley & Cross, 1992; Weiss, 1999; Adam, 1996; Henke & Zahn, & Carroll, 2001; Ingersoll, 2001; Inman & Marlow, 2004; Borman & Dowling, 2006;
Guarino et al., 2006). The reasons for teachers to stay in the teaching profession encompasses teacher characteristics including gender, age, and years of experience; as well as professional development and school characteristics such as job satisfaction, opportunities involved in making career decisions, and administrative support.

In previous studies of teacher characteristics, age and years of experience were found to be important when determining teacher retention (Adams, 1996; Hanushek, Kain, & Rivkin, 2004; Hughes, 2012; Ingersoll, 2001; Kirby, 1991; Murnane et al., 1989). Findings from these studies show that age is a significant predictor for teacher retention. There was a statistically significant positive relationship among age, years of experience, and teacher retention (Hughes, 2012). From the literature, we can see the study of age and teacher retention as being relevant from the 1990s until present. Gender is also correlated with retention. Adams (1996), Borman and Dowling (2006), and Guarino et al. (2006) found that men were more likely to stay in teaching as compared to women. Despite these research findings, Ingersoll (2001) reported that women have more self-reported commitment to the teaching career.

Previous research established several reasons such as salary, administrative support, and ability in career decision making as the important reasons for teachers to stay in the teaching profession (Ingersoll, 2003; U.S Department of Education, 1999). Several studies have revealed that teacher retention is increased as the teacher becomes more involved in professional development such as mentoring or networking (Knight & Baker, 2000; Smalley & Smith, 2007). Furthermore, many studies found that teachers with high satisfaction to teach will remain in teaching (Hughes, 2012; Blackburn, Bunch, & Haynes, 2017; & Tippens, Morgan, Navarro, & Flanders, 2013). Several factors that have relationship with
teachers’ career satisfaction are salary, gender, work-balance, working conditions, and years of teaching experience. Hughes (2012) reported factors such as salary, administrative supports, and working conditions have close relationship with teachers’ satisfaction to teach. Sorenson and McKim (2014) found the significant positive relationship between work balance, professional commitment, and job satisfaction of agriculture teachers. Teacher who feels happy with their work might stay longer in teaching (Hughes, 2012). Therefore, it is important to keep teachers satisfied with their work to improve teacher retention.

Administrative support is one of the factors influencing teachers to stay (Fox & Certo, 1999; Billingsley, Gersten, Gillman & Morvant, 1995; Ingersoll, 2003). Moreover, a lack of involvement in decision-making will also influence teachers not to remain in teaching (Fox & Certo, 1999; Ingersoll, 2003).

**Reviews on Teachers’ Retention Theories**

The Chapman model of teacher attrition (1984) explains several components that lead to teacher retention: personal characteristics, initial commitment, external influences, career satisfaction, quality of first employment, integration into teaching, and educational preparation. The model proposed by Chapman, (1984) provides insight into some of the reasons that could lead teachers to stay in the teaching career. Previous research reported the relevance of how this theory helps explain teacher retention based on multiple influences or predictors (Odell & Ferraro, 1992; Ruhland, 2001; Billingsley, 1993; Shen, 1997).

Chapman’s model is appropriate to investigate teacher retention by using the personal characteristic components (i.e. gender), teacher-training components (i.e. teachers’ educational attainment), professional and social integration into teaching components (i.e.
teachers’ involvement in career). The model is also useful to study career satisfaction that influence teachers’ decision to stay or leave the teaching profession (Chapman, 1983b). Previous evidence shows that all the components mentioned are likely to bind a teacher to the school and retain them longer (Chapman & Hutcheson, 1982).

In another study, Tippens, Rickets, Morgan, Navarro and Flanders (2013) developed a “Primary Causes of Teacher Attrition in Agricultural Education” conceptual model and determined that several predictors such as working conditions, compensation, family and personal factors, and satisfaction, eventually influence job satisfaction and cause teacher attrition in agricultural education. The “Primary Causes of Teacher Attrition in Agricultural Education” conceptual model is relevant in understanding teacher job satisfaction and its relationship with teacher retention (Sorensen & McKim, 2014).

Meanwhile, Grissmer and Kirby’s theory of teacher attrition (1987) provides an explanation of the U-shape of the teacher attrition trend and possible reasons that teachers quit teaching. Teacher attrition usually happens in the beginning of the teaching career, decreases for experienced teachers, and rises again when teachers approach retirement age. Further, research from Kirby and Grissmer (1993) found that higher salaries are the major factor to remain in teaching. Previous research shows that Grissmer and Kirby’s theory is relevant and has been discussed in many studies including teacher attrition, teacher turnover in urban schools, and retention among special education teachers (Marlow, Inman, & Betancourt-Smith, 1997; Guin, 2004; & Kulkarni, 2015). Figure 1 summarizes the review of literature on teacher retention and consists of three main categories: factors that motivate teachers to teach, teachers’ intentions to continue teaching, and reasons for teachers to stay in the teaching career. It also serves as a conceptual framework for the dissertation.
Figure 1: Conceptual framework
References


Knight, J., & Baker, M. (2000). How are we going to keep them down on the farm (Oops, the school)? *Agricultural Education Magazine, 72*(5), 6-7.


CHAPTER III
FACTORS THAT MOTIVATE HIGH SCHOOL AGRICULTURE TEACHERS TO TEACH

A paper prepared for submission to the Journal of Agricultural Education

Normala Ismail & Gregory S. Miller

Abstract

The purpose of this research was to describe the motivational factors (intrinsic, extrinsic, and altruistic) that influence high school agriculture teachers to teach. This was a census study using an online questionnaire that was sent to (N=252) agriculture teachers in Iowa. The overall response rate was 48% (n=119). Tailored Design Method using five contacts was used for data collection to reduce survey error. Motivational factors were measured using a four-point Likert-type scale with the options ranging from 1=strongly disagree, 2=disagree, 3=agree, and 4=strongly agree. Factor Analysis using maximum likelihood was used to identify the factors underlying teachers’ motivations to teach. Results show that intrinsic and extrinsic were factors that motivate teachers to teach. Means and standard deviations were 3.24(0.13) for intrinsic, and extrinsic 2.55 (0.19) respectively indicating these factors influenced teachers’ motivations to teach. The findings were consistent with previous studies on intrinsic and extrinsic motivations in Self-Determination Theory. Additional research is needed to explore how to increase high school agriculture teachers’ intrinsic and extrinsic motivations to teach, which could increase teacher retention.

Introduction

A recent report from the National Agricultural Education Supply and Demand Study shows the increasing trend of school-based agriculture education (SBAE) teachers leaving the profession. In 2016 and 2017, nearly 80 agriculture teachers were needed but were unavailable to fulfill the positions(Foster, Lawver & Smith, 2014; Smith, Lawver, & Foster, 2016; Smith, Lawver, & Foster, 2017).

Numerous previous studies have focused on reasons why people choose the teaching profession (Heinz, 2015). Most existing studies adopted the tripartite constructs of teaching motivations: intrinsic, altruistic, and extrinsic (Moran, Kilpatrick, Abbott, Dallat, &
McClune, 2001; Kyriacou, Hultgren, and Stephens, 1999). These motivations have been widely used in education and are important in the teaching profession.

The National Association of Agriculture Educator’s national research agenda focuses on creating a sufficient professional workforce that addresses the challenges of the 21st century (Roberts & Brashears, 2016). Concerning this priority, it is important to retain teachers in the teaching profession. However, there is no research reporting agriculture teachers’ motivations to teach in Iowa. Realizing this gap, the researcher examines agriculture teachers’ motivation to teach by integrating intrinsic, altruistic, and extrinsic motivational constructs.

**Literature Review**

In the literature, there is a considerable number of studies reported on teachers’ motivations to teach. Studies on teacher motivation attempt to explain the reasons teachers choose teaching and the relationship with teacher retention (Richardson & Watt, 2005; Han & Yin, 2016). Various studies have commonly distinguished motivations for teachers to teach into the three categories: intrinsic, extrinsic, and altruistic motivations (Kyriacou, Hultgren, & Stephens, 1999; Moran, Kilpatrick, Abbott, Dallat, & McClune, 2001; Richardson & Watt, 2006).

Previous research reported the influence of motivations on job satisfaction, increasing student motivations, teaching effectiveness, intention to remain in teaching, and teaching commitment (Jesus and Lens; 2005; Han & Yin, 2016; Synder 1974; Dinham & Scott, 1997; Ashideu & Scott-Ladd, 2012; Taylor, Jardine, Mc Naney, Lehman & Chan, 2014 & Rice, Verge, & Gartin, 2011).
In addition, studies on motivations for teachers to remain in teaching in developing and Western countries show different trends of teachers selecting teaching as a career. Previous studies on what influences people to teach in developing countries show that extrinsic motivations such as material benefits, job security, monetary rewards, and salaries are the important reasons for people to teach (Yong, 1995). Whereas intrinsic and altruistic become the important reasons for people to teach in Western countries (Moran et. al 2001; Bastic, 2000; OECD, 2005). The findings established from these studies show that motivations influence people to teach are complex and differ between individuals.

**Intrinsic Motivation**

Intrinsic motivation to teach involves feelings, desires and incentives, which stems from an individual’s behavior (Dictionary of Behavioral Sciences, 1989). Numerous studies presented evidence of intrinsic motivations for teachers to teach and its relationship with teachers’ satisfaction, commitment, and student motivations (Reilly & Welton, 1980; Dinham & Scott, 1997; Ashideu & Scott-Ladd, 2012; Roness; 2011).

Findings from previous studies depicted that intrinsic motivation to teach was significant for teachers’ longevity and satisfaction in their career. Taylor et al. (2014) found that teachers intend to stay longer when they feel teaching is a fulfilling career.

Roness (2011) mentioned that teachers who feel happy when teaching will inherent satisfaction. This statement supported previous work by Gagné & Deci (2005) who mentioned that individuals with intrinsic motivation will gain satisfaction from the activity. The positive intrinsic motivation to teach will influence teachers’ satisfaction and commitment to teaching. Research has shown that intrinsic motivation was significant for
early career teachers to teach. Hellsten & Prytula (2011) found teachers in their early careers have had intrinsic motivations to teach such as working with young people and chances to teach subject matter they are interested in. In addition, previous research shows that teachers with high levels of intrinsic motivation will influence students’ motivation to learn. Research found that students taught by intrinsically motivated teachers had higher enjoyment in learning (Wild, Enzle, Nix, and Deci, 1997).

**Extrinsic Motivation**

Extrinsic motivation is important in persuading teachers to teach. Extrinsic motivation stems from positive or negative external reinforcement (Dictionary of Behavioral Sciences, 1989). The literature on extrinsic motivations for teachers to teach has established important findings related to career choice, teachers’ commitment, teacher characteristics such as gender and marital status, and teacher retention (Rice, LaVergne & Gartin, 2011; Crutchfield et al, 2013 & Hellsten & Prytula, 2011).

According to Brown (1992), external factors are major influences on teachers’ decisions to teach. This type of motivation will encourage teachers to stay longer in and increase teachers’ satisfaction and commitment to their careers. Extrinsic factors that keep teachers teaching include holidays and compensation (Taylor et al., 2014), as well as material benefits, salary, vacations, and external rewards (Roness, 2011).

In the field of agricultural education, previous studies only reported on the relationship among extrinsic motivations with teacher retention, perception of working as agriculture teachers, challenges in the beginning of the profession, and teachers’ work-life
balance such as time with family (Delnero & Montgomery, 2001; Crutchfield et al. 2013 & Whittington, McConnell, & Knobloch, 2006).

Findings from Crutchfield et al. (2013) show that the primary reasons agricultural educators remain in the classroom is having a work-life balance. In addition, research shows that teachers perceived extrinsic motivations such as “having highly motivated students”, “having a good classroom”, and “good laboratory conditions” as the primary motivations for them to continue teaching (Rice, Verge, & Gartin, 2011). Quality of students has become an extrinsic factor that motivates or demotivates teachers to teach (Kiziltpe, 2006, 2008; Sugino 2010).

Extrinsic motivation factors for agriculture teachers may interact with teachers’ characteristics such as marital status and school environment. Married teachers emphasized extrinsic motivations such as “salary or benefits” (Taylor et al. 2014). Further, the external factors such as compensation, working conditions, and school environment also influence teachers to teach. The National Center for Educational Statistics (2011) reported that schools with adequate compensation and a better workplace were able to attract and retain good teachers longer in school.

Altruistic Motivation

Despite the significance of intrinsic and extrinsic motivational factors that influence teachers’ decision to teach, altruistic motivations also play an important role. Altruistic motivation focuses on behavior that is performed to benefit another person, intentionally or voluntarily performed without expecting any rewards from the act (Bar-Tal, 1976; Berkowitz, 1972; Krebs, 1970; Leeds, 1963 & Staub, 1978). Teachers recognize altruistic
motivations such as making differences for students, teaching as a lifelong learner, and having a dynamic working environment as important factors for teacher retention.

Previous research showed that altruistic motivation factors such as desire to work with children, contribution to society, helping students with difficulties, and helping students gain a sense of personal achievement are the reasons that influence teacher candidates to teach (Brookhart & Freeman, 1992; Richardson and Watt, 2006; OECD, 2005 & Yu & Bieger, 2013).

Reilly & Welton (1980) found that altruistic motivation factors encouraged Kansas vocational agriculture teachers to remain in teaching. Similarly, Taylor et al. (2014) found that teachers feel rewarded when they make a difference in their students’ lives and build a good relationship with them.

**Conceptual Framework**

The conceptual framework for this study is an adaptation of Self-Determination Theory (SDT). SDT explains motivations based on choices perceived by an individual that lead to an action (Ryan & Deci, 2000). SDT has been established to study intrinsic and extrinsic motivations (Gagné, & Deci, 2005; Reeve, Deci, & Ryan, 2004; Deci, Vallerand, Pelletier, & Ryan, 1991; Taylor, Ntoumanis, & Standage, 2008). Intrinsic motivation refers to an individual’s interest or feeling of enjoyment in performing an activity. While extrinsic motivation is referring to an individual performing an activity that leads to a distinguishable outcome (Ryan & Deci, 2000). SDT is useful to study intrinsic and extrinsic motivational concepts in educational settings (Ryan & Deci, 2000). SDT theory also explains the difference between intrinsic and extrinsic goals that influence individual behavior. For
example, intrinsic goals are about personal growth that give meaning for individuals, whereas extrinsic goals are about wealth, fame, and image. Self-Determination Theory explains intrinsic and extrinsic, but not altruistic motivation. The altruistic motivations are likely to be an essential motivation for teachers to teach (Brookhart & Freeman, 1992; Richardson and Watt, 2006; OECD, 2005 & Yu & Bieger, 2013, Brown, 1992). Therefore, a conceptual framework that adopted the intrinsic and extrinsic concepts from SDT and incorporated altruistic motivations was developed in this study (Figure 1).

![Factors that Motivate High School Agriculture Teachers to Teach](image)

Figure 1: Conceptual framework of factors that motivate high school agriculture teachers to teach

**Purpose and Objectives**

The purpose of the study was to describe the factors that influence high school agriculture teachers’ motivation to teach. The motivation to teach included intrinsic motivations, extrinsic motivations, and altruistic motivations.
The specific research objectives were as follows:

1. Describe selected demographic characteristics of high school agriculture teachers.

2. Identify factors underlying teachers’ motivations to teach.

3. Describe the factors that motivate high school agriculture teachers to teach.

**Methodology**

The purpose of the study was to describe the factors that motivate high school agriculture teachers to teach. The research design was quantitative and descriptive, using a cross-sectional survey approach (Creswell, 2003). The researcher conducted a census study of 252 high school agriculture teachers in Iowa. The researcher obtained the list of names and contact information of participants from the Iowa FFA Association.

**Instrument**

A questionnaire was used to collect data. The online questionnaire was adapted from studies conducted by Ferrel & Larry (1993), Rice, LaVergne & Gartin (2011), and Muturia (2007). This manuscript is part of large study. Only three parts: Part 1, Part 3 and Part 4 of the questionnaire were relevant to the objectives of this paper. Part 1 consisted of 18 Likert-type items measuring intrinsic motivations, 21 Likert-type items measuring extrinsic motivations, and 11 Likert-type items measuring altruistic motivations. All the items were in the form of a four-point Likert scale where the participants were given four options to answer with 1=strongly disagree, 2=disagree, 3=agree, and 4=strongly agree. Part 3 consisted of seven additional yes or no questions measuring factors that influence teachers’ motivations to teach. Part 4 consisted of eight demographic characteristics questions.
Validity

To enhance the internal validity of the study, steps were taken to reduce measurement error. A panel of three experts assessed the face, content, and construct validity of the questionnaire. The panel conducted their initial review using a set of guidelines prepared by the researcher. Recommendations for improving the questionnaire were made. The questionnaire was modified with suggestions from the panel. All panel members agreed that the questionnaire was face, content, and construct valid in the final review.

Reliability

After receiving approval from the internal review board (IRB), a pilot study was conducted to assess reliability. The questionnaire was pilot tested with 10 high school agriculture teachers. Reliability coefficients were calculated on the pilot data and were as follows: intrinsic motivation = .73, extrinsic motivation = .90, and altruistic motivation = .83. The coefficients were determined to be acceptable based on guidelines established by Millan and Shumacker (1984).

Data Collection

This was a census study on 252 high school agriculture teachers in Iowa, and the data were collected in September 2017. Dillman et al. (2009) tailored design method was used for the formal data collection. The pre-notification email via Qualtrics was sent to high school agriculture teachers. After three days, a second email was sent to all teacher via Qualtrics that explained why participants should participate in the study with a URL link to access to the questionnaire. After 10 days, a first reminder email was sent via Qualtrics to non-
respondents. One week later, the researcher sent out the second reminder email via Qualtrics to non-respondents. For the final contact, a postcard that included the URL link to the questionnaire was sent through the U.S. Postal Service. A closing date for the questionnaire was set at one week after the final contact. A final response rate of 47% (n = 119), was achieved.

**Data Analysis**

In dealing with the issue of nonresponse, the researcher compared the early and late respondents using statistical analysis (Ary, Jacobs, Sorenson & Razavieh, 2010). A total of 119 teachers completed the questionnaire. The first half to respond (n = 60) were considered the early respondents, and second half to respond (n = 59) were considered the late respondents. The results from the independent sample t-test shows that early and late respondent groups were not significantly different on any of the variables (intrinsic motivation, extrinsic motivation, and altruistic motivation). The comparisons of early and late respondents provided some evidence of representation for agriculture teachers in Iowa (Linder, Murphy & Briers, 2001).

The data were analyzed using the Statistical Package for the Social Science (SPSS) version 23.0. Cronbach’s alpha was used to determine the reliability for three constructs. The coefficients were .88 for intrinsic motivations, .79 for extrinsic motivations, and .85 for altruistic motivations. As was the case with pilot study data, the reliability coefficients were acceptable (Millan & Schumacher, 1984).

Frequencies, percentages, means, variances, and standard deviations were used to analyze data for objectives one and three. To facilitate exploring the factors and evaluating
the three motivation constructs (intrinsic, extrinsic, and altruistic) in the conceptual framework the multivariate analysis, Confirmatory Factor Analysis (CFA), and Maximum Likelihood Factor Analysis (FA) were used to identify factors underlying teachers’ motivation to teach.

Findings

Objective 1
Describe selected demographic characteristics of high school agriculture teachers.

The results from the survey show that 63 of agriculture teachers were female, whereas 56 of the teachers were male. The age of the teachers ranged from 21 to 65 years with the average age being 38.15 years with a standard deviation of 13.12. A majority (63%) of the teachers had received bachelor’s degrees, and 37% of the teachers had a master’s degree for their highest academic attainment. A majority (65.5%) of the agriculture teachers were married while 30.3% were single teachers, and a small number of teachers, 3.4% were divorced.

Objective 2
Identify factors underlying teachers’ motivations to teach.

Confirmatory Factor Analysis (CFA) was used to determine whether the data supported three factors (intrinsic, extrinsic and altruistic) underlying teachers’ motivation to teach as depicted in the theoretical framework. Several steps are involved in CFA. Assumptions were met, and pooled CFA construct for the measurement model was used. The pooled CFA method was used to increase the degrees of freedom for a combination of intrinsic, extrinsic, and altruistic motivations. Root mean square error of approximation
(RMSEA), comparative fit index (CFI), Tucker–Lewis index (TLI), root mean square residual (RMR), goodness fit index (GFI), incremental fit index (IFI), nonnormed fit Index (NFI) and relative fit indices (RFI).

Table 1 reported the fitness indexes for the three models. Table 2 provided the fitness index and level of acceptance from literature. The initial model measurement did not fit the data and needed to be modified. The second model was the modification to the initial model, which used modification indices. Findings shows the model improved, where the value of RMSEA was dropped, the TLI, CFI, and GFI increased but still did not fit the data. The last model was a final model revision. Seven items with lower factor loadings were deleted which improved the model fit. The last model did not meet all the fitness indexes level of acceptance, but did have an improvement where the RMSEA value was reduced, and GFI, CFI, TLI and IFI increased.

The fit indices in Table 1 indicate that the second model (model indices) with freely estimated parameters fit the data better than the initial model. Comparison from model revision utilizing (modification indices) and model revision using (final model) shows the difference improvement from the fit indexes of the final model.

Table 1

<table>
<thead>
<tr>
<th>Fit Indexes</th>
<th>First Model (Measurement Model)</th>
<th>Second Model (Modification Indices)</th>
<th>Final Model (Model Revision)</th>
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<tr>
<td>RMSEA</td>
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<td>0.69</td>
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<tr>
<td>NFI</td>
<td>0.37</td>
<td>0.44</td>
<td>0.49</td>
</tr>
<tr>
<td>RFI</td>
<td>0.34</td>
<td>0.41</td>
<td>0.46</td>
</tr>
</tbody>
</table>
Table 2

*Fitness Index and Level of Acceptance*

<table>
<thead>
<tr>
<th>Name of Category</th>
<th>Index</th>
<th>Level of Acceptance</th>
<th>Literature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absolute Fit</td>
<td>RMSEA</td>
<td>RMSEA &lt; 0.08</td>
<td>Browne &amp; Cudeck (1993)</td>
</tr>
<tr>
<td>Incremental Fit</td>
<td>AGFI</td>
<td>AGFI &gt; 0.90</td>
<td>Tanaka &amp; Huba (1985)</td>
</tr>
<tr>
<td></td>
<td>CFI</td>
<td>CFI &gt; 0.90</td>
<td>Bentler (1990)</td>
</tr>
<tr>
<td></td>
<td>TLI</td>
<td>TLI &gt; 0.90</td>
<td>Bentler and Bonett (1980)</td>
</tr>
<tr>
<td></td>
<td>NFI</td>
<td>NFI &gt; 0.90</td>
<td>Brown (2006) Bollen (1989b)</td>
</tr>
</tbody>
</table>

The current results from the CFA test provided evidence that the final model did not fit the data and did not confirm the conceptual framework. Therefore, a factor analysis using maximum likelihood was used to determine the factors underlying high school agriculture teachers’ motivations to teach.

A factor analysis is useful to confirm the latent factor structure for a group of measured variables. In this study, the motivations to teach include intrinsic, extrinsic, and altruistic motivations. The maximum likelihood method was used to estimate factor loadings (O’Rourke, Hatcher, & Stepanski, 2005).

Two steps to conduct a maximum likelihood test were used in this study. The first
maximum likelihood factor analysis was applied to all of the motivational items (50 statements). Eigenvalue and scree plot were used to determine the factors needed. Only the factors with an eigenvalue equal to or greater than one were retained. No rotation is needed for the first maximum likelihood because the researcher is interested to identify which variables load better for the latent factors. Findings (21 statements) with factor loadings .40 were retained from the first maximum likelihood factor analysis.

In the second step, maximum likelihood factor analysis was conducted to extract the three factors from the data. Oblique/Oblimin rotation was used to enable the factors to be correlated. The result from the pattern matrix that holds the factor loadings was reported. Of the 21 statements, 12 statements were loaded on the first factor, and four statements loaded on the second factor. Only two statements loaded on the last factor; these statements were deleted because at least three statements were needed to form a factor. Thus, only Factor 1 and Factor 2 were reported here. Cronbach’s alpha was used to calculate the reliability. The coefficients were .84 for intrinsic and .61 for extrinsic.

Table 3 presented the rotated factor loadings for the motivational factors. The first factor was labeled intrinsic factors, and the second factor was labeled extrinsic factors. Factor analysis with the oblique rotation shows that the first factor accounted for 21.12% variance, and the second factor accounted for 4.32% variance (Table 4). The factor correlation matrix shows the inter-correlations between the rotated factors in Table 5. Result shows there was a low positive correlation between Factor 1 and Factor 2 (Davis, 1971). The rotated factors were dependent and explained the relationship.
Table 3

*Rotated Factor Loadings for High School Agriculture Teacher Motivations to Teach.*

<table>
<thead>
<tr>
<th>Abbreviated Item</th>
<th>Factor Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Factor 1 = Intrinsic factors</em></td>
<td></td>
</tr>
<tr>
<td>Felt teaching would be enjoyable</td>
<td>.71</td>
</tr>
<tr>
<td>Fits well personality</td>
<td>.66</td>
</tr>
<tr>
<td>Enjoy working with children</td>
<td>.61</td>
</tr>
<tr>
<td>Chance to serve as a positive role model for children</td>
<td>.60</td>
</tr>
<tr>
<td>Creative profession</td>
<td>.59</td>
</tr>
<tr>
<td>Personal “calling” to teach</td>
<td>.57</td>
</tr>
<tr>
<td>Teaching as challenging occupation</td>
<td>.54</td>
</tr>
<tr>
<td>Opportunity of career advancement</td>
<td>.48</td>
</tr>
<tr>
<td>Opportunity to help students gain a sense of self-worth</td>
<td>.48</td>
</tr>
<tr>
<td>Chance to impact the society</td>
<td>.45</td>
</tr>
<tr>
<td>Wanted to work with young people</td>
<td>.44</td>
</tr>
<tr>
<td>Have highly motivated students in class</td>
<td>.44</td>
</tr>
<tr>
<td><em>Factor Two = Extrinsic factors</em></td>
<td></td>
</tr>
<tr>
<td>Have nice benefits associated with their jobs</td>
<td>.53</td>
</tr>
<tr>
<td>Teachers in agricultural education courses have flexibility in their schedules</td>
<td>.50</td>
</tr>
<tr>
<td>Have a pleasant working environment</td>
<td>.44</td>
</tr>
<tr>
<td>Chance to make a good salary</td>
<td>.40</td>
</tr>
</tbody>
</table>

Table 4

*Percent of Variance Explained by Intrinsic and Extrinsic Factors*

<table>
<thead>
<tr>
<th>Factors</th>
<th>%</th>
<th>Cumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrinsic</td>
<td>21.12</td>
<td>21.12</td>
</tr>
<tr>
<td>Extrinsic</td>
<td>4.32</td>
<td>25.44</td>
</tr>
</tbody>
</table>
Table 5

*High School Agriculture Motivations to Teach: Intercorrelations of Rotated Factor (intrinsic and extrinsic)*

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Intrinsic</td>
<td>-</td>
<td>.235</td>
</tr>
<tr>
<td>2. Extrinsic</td>
<td>.235</td>
<td>-</td>
</tr>
</tbody>
</table>

*Notes: Extraction Method: Maximum Likelihood*  
*Rotation Method: Oblimin with Kaiser*

Objective 3

*Describe the factors that motivate high school agriculture teachers to teach.*

A four-point Likert-type scale with response options ranging from strongly disagree (1) to strongly agree (4) was used to measure high school agriculture teachers’ motivation to teach. The decision rule for interpreting the means is shown in Table 6.

Table 6

*Decision Rule to Interpret the Mean Score for the Likert-type Scale*

<table>
<thead>
<tr>
<th>Likert – type categories</th>
<th>Mean Score</th>
<th>Interpretation of the statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.00 – 1.5</td>
<td>Strongly Disagree (Negative)</td>
</tr>
<tr>
<td>2</td>
<td>1.51 – 2.5</td>
<td>Disagree (Negative)</td>
</tr>
<tr>
<td>3</td>
<td>2.51 – 3.5</td>
<td>Agree (Positive)</td>
</tr>
<tr>
<td>4</td>
<td>3.51 – 4.0</td>
<td>Strongly Agree (Positive)</td>
</tr>
</tbody>
</table>

Table 7 presents the means and standard deviations for high school agriculture teachers’ motivation to teach. The overall mean score was 3.24 with a standard deviation of 0.13 for intrinsic motivational factors. Agriculture teachers agreed that intrinsic motivation factors influenced them to teach. For the important individual factors within intrinsic, agriculture teachers provided the highest mean score for the statement “*Chance to serve as a positive role model for children*” $M = 3.43$, $SD = 0.53$. It was followed by “*Teaching is a*
challenging occupation," $M = 3.41$, $SD = 0.62$, and “Felt teaching would be enjoyable,” $M = 3.34$, $SD = 0.56$ statements. Agriculture teachers rated the lowest mean score for the statement “Have highly motivated students in class,” $M = 2.95$, $SD = 0.74$.

The overall mean score was 2.55 with a standard deviation of 0.19 for extrinsic motivational factors. Agriculture teachers agreed that extrinsic motivational factors influenced them to teach. For the important individual factors within extrinsic, agriculture teachers provided the highest mean score for the statements “Have nice benefits associated with their jobs,” $M = 2.80$, $SD = 0.63$. It was followed by “Have a pleasant working environment,” $M = 2.66$, $SD = 0.59$ and “Teachers in agricultural education courses have flexibility in their schedules,” $M = 2.38$, $SD = 0.70$, statements. Agriculture teachers rated the lowest mean score for the statement “Chance to make a good salary,” $M = 2.34$, $SD = 0.81$.

Table 7

*Means and Standard Deviations for High School Agriculture Teacher Motivational Factors to Teach*

<table>
<thead>
<tr>
<th>Factors and Abbreviated Item</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Factor 1 = Intrinsic factors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Felt teaching would be enjoyable</td>
<td>3.34</td>
<td>0.56</td>
</tr>
<tr>
<td>Fits well personality</td>
<td>3.24</td>
<td>0.57</td>
</tr>
<tr>
<td>Enjoy working with children</td>
<td>3.20</td>
<td>0.48</td>
</tr>
<tr>
<td>Chance to serve as a positive role model for children</td>
<td>3.43</td>
<td>0.53</td>
</tr>
<tr>
<td>Creative profession</td>
<td>3.17</td>
<td>0.51</td>
</tr>
<tr>
<td>Personal &quot;calling&quot; to teach</td>
<td>3.11</td>
<td>0.71</td>
</tr>
<tr>
<td>Teaching as challenging occupation</td>
<td>3.41</td>
<td>0.62</td>
</tr>
<tr>
<td>Opportunity of career advancement</td>
<td>3.26</td>
<td>0.51</td>
</tr>
<tr>
<td>Opportunity to help students gain a sense of self-worth</td>
<td>3.33</td>
<td>0.52</td>
</tr>
<tr>
<td>Chance to impact the society</td>
<td>3.24</td>
<td>0.52</td>
</tr>
<tr>
<td>Wanted to work with young people</td>
<td>3.14</td>
<td>0.51</td>
</tr>
</tbody>
</table>
Agriculture teachers were asked additional yes-no questions about the important factors that influenced their decisions to teach agricultural education. Table 8 reported the frequency and percentages of these factors. A majority \((f = 113, 97\%)\) of the teachers stated that “personal reasons” was a factor that influenced them to teach agricultural education. 87% of agriculture teachers determined “desire to teach” and “ability to teach” were influential factors for them to teach agricultural education. 75.6% determined “encouragement from others” was a factor that influenced them to teach agricultural education.

Adding to this, most \((f = 88, 73.9\%)\) of the respondents stated “pay” was not an influential factor in teaching agricultural education. Interestingly, many \((f = 81, 68\%)\) agriculture teachers mentioned “family” was not a factor that led them to teach agricultural education. Regarding job security, 56.3% \((f = 67)\) of the respondents stated this factor influenced them to teach agricultural education.
Table 8

*Frequency and Percentages of the Factors that Influence High School Agriculture Teacher to Teach Agricultural Education*

<table>
<thead>
<tr>
<th>Factors</th>
<th>Frequency</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Reasons</td>
<td>Yes</td>
<td>113</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>4</td>
</tr>
<tr>
<td>Pay</td>
<td>Yes</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>88</td>
</tr>
<tr>
<td>Desire to teach</td>
<td>Yes</td>
<td>104</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>15</td>
</tr>
<tr>
<td>Ability to teach</td>
<td>Yes</td>
<td>104</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>15</td>
</tr>
<tr>
<td>Family influence</td>
<td>Yes</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>81</td>
</tr>
<tr>
<td>Encouragement from others</td>
<td>Yes</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>29</td>
</tr>
<tr>
<td>Job security</td>
<td>Yes</td>
<td>67</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>52</td>
</tr>
</tbody>
</table>

**Conclusions, Implications, and Recommendations**

The purpose of the study was to determine the factors that influence high school agriculture teachers’ motivation to teach in Iowa. The objective sought to identify factors underlying teachers’ motivation to teach. The results of the Confirmatory Factor Analysis (CFA) indicated the final models did not fit the data and achieve acceptable fit indexes. It is recommended that CFA be used to reassess the conceptual framework with a larger sample of teachers.

Results from the maximum likelihood factor analysis (FA) shows that several extrinsic items hang in together, whereas several altruistic items hang in with intrinsic items. Due to this, it can be concluded that only two factors underlie participating high school
agriculture teachers’ motivation to teach: (1) intrinsic factors (2) extrinsic factors. This finding supported Self-Determination Theory that has been established to study intrinsic and extrinsic motivation. It can be concluded intrinsic and extrinsic factors most likely influenced agriculture teachers’ motivation to teach.

The third objective sought to describe the factors underlying teachers’ motivation to teach. Agriculture teachers most likely to possess intrinsic factors such as “Chance to serve as a positive role model”, “Teaching as challenging occupation” and “Felt teaching would be enjoyable” as primary motivations. The results confirm the previous study that intrinsic motivations influence teachers to teach (Hellsten & Prytula, 2011). Teachers want to teach because they feel happy. Teachers need a supportive school administrator who can help guide them their roles as teacher (Billingsley & Cross, 1992). In addition, teachers feel that teaching is an enjoyable profession. The findings agreed with previous findings found agriculture teachers received a lot of enjoyment when teaching (Reilly and Welton, 1989). Teachers feel satisfied and happy to teach. This motivation will encourage them to continue teaching and be committed in their career.

The results from additional questions of individual motivational factors show that the majority of agriculture teachers selected “personal reasons”, “desire to teach”, and “ability to teach” as the factors that influenced their decision to teach agricultural education. It can be concluded that significant numbers of teachers in Iowa had intrinsic motivations that influenced them to teach. Interestingly, 73.9% of teachers did not choose the extrinsic factor such as “pay” as an influential factor for them to teach.

Overall, the findings indicate that intrinsic and extrinsic motivations influenced agriculture teachers to teach. This study has implications to agriculture teachers’ decision to
teach and stay longer in the career. Close attention should be paid to the important motivational factors that influence agriculture teachers to teach.

**Recommendations for practice / future research**

1. School administrators should continuously support and listen to agriculture teachers’ needs to help them stay longer. Teachers need physical and moral supports to remain in teaching.

2. Continue and improve the National Association of Agricultural Educator’s (NAAE) Leadership for Retention [XLR8] program. The professional development program should cater to the important aspects of high school agriculture teachers’ motivations to teach.

3. Results from the current study show that intrinsic and extrinsic motivations are useful to measure agriculture teachers’ motivation to teach. Further research using qualitative methods could help to further explain and provide a better understanding of agriculture teachers’ motivation in teaching.

4. It is recommended to continue research exploring motivational factors that influence high school agriculture teachers to teach in other states.

**References**


CHAPTER IV
PREDICTING HIGH SCHOOL AGRICULTURE TEACHERS’ INTENTIONS TO CONTINUE TEACHING BASED ON THEIR PERSONAL AND PROFESSIONAL NEEDS

A paper prepared for submission to the Journal of Agricultural Education

Normala Ismail & Gregory S. Miller

A descriptive survey study was used to investigate personal and professional needs influencing high school agriculture teachers’ intentions to continue teaching in Iowa. The online validated questionnaire was sent to 252 agriculture teachers, and 119 completed the questionnaire. A four-point Likert-type scale ranging from 1 = strongly disagree, 2 = disagree, 3 = agree, and 4 = strongly agree was used to measure the needs for agriculture teachers’ intentions to continue teaching. The grand mean and standard deviation was 2.64 (.64) for the eight influential needs, which indicate that the needs were slightly influencing teachers’ intentions to continue teaching. These needs were entered into a multinomial logistic regression using forward stepwise method to predict the likelihood of teachers’ plans to continue teaching. Results show the model was statistically significant ($\chi^2 = 39.97; p = 0.01$) and 31% (Pseudo R2 = .31) of the variance can be explained by significant predictors: teacher recognition (p = .001), teaching as a right career (p = .035), family expectation of staying (p = .035), and teaching makes oneself feel good (p = .040). Teachers who feel good about teaching and think it is the right career for them will more likely plan to continue teaching until retirement. Findings are consistent with previous studies that reported teachers with strong self-esteem, and the belief that teaching is the right career for them will expect to stay longer.

Introduction

Teacher attrition is defined as the percentage or rate of beginning teachers who leave the teaching profession (Unesco, 2017). Teacher attrition has been acknowledged as a prevalent issue in many countries including the United States (Borman & Dowling, 2008; Brill & McCartney, 2008; Watt & Richardson, 2008). The issue has been concerning for a few decades in the United States (Ingersoll, 2001) where 33% of teachers leave teaching in the first three years, and 46% leave teaching after the first five years (Brill & McCartney,
Teacher attrition increases costs for teacher training and leads to difficulty in long-term planning. Realizing how critical this issue is, recruitment of new teachers and teacher retention are required to solve the teacher attrition problem. Although recruitment is important, retention of teachers must be the priority to lower the teacher attrition rates at schools (Ingersoll and Smith, 2003).

In order to address teacher attrition in agricultural education, many studies focus on the reasons why teachers leave the profession (Camp, 2000, Edwards & Briers, 2001). Teachers leave the profession for voluntary or involuntary reasons. In addition, previous studies in agricultural education were conducted on agriculture education teachers’ problems (Myers, Dyers, & Washburn, 2005) with: teachers’ job satisfaction (Cano & Miller, 1992; Walker, Garton, & Kitchel, 2004) and family and work-life balance (Murray, Flowers, Croom & Wilson, 2011).

Understanding teachers’ intentions and their plan to stay is important for developing better teacher retention strategies. So far, several teacher retention strategies have been implemented such as student loan forgiveness, scholarships, and professional development programs for early, mid-career, and late-career agriculture teachers. However, the current strategies do not effectively overcome the attrition problem, or the shortage of qualified agriculture teachers (Walker, Garton, and Kitchell, 2004). Therefore, this study is needed to determine the personal and professional needs that influence agriculture teachers’ intentions to remain in teaching. This study address the American Association for Agricultural Educator’s national research agenda related to ensuring there are enough qualified and high quality teachers in agricultural education (Roberts & Brashears, 2016).
Literature Review

Worthy (2005) found that teachers who stay in teaching for more than five years reached their full potential in teaching. This finding is supported by previous literature, which states that teachers who have five to eight years of teaching experience would master their profession (Scherer, 2001). Teachers who stay longer gain more experience and become more effective teachers. Several studies investigating teachers’ intentions to continue teaching have been carried out on beginning teachers and found that teachers leave the profession after few years of teaching (Wilhelm, Dewhurst–Savellis, & Parker, 2000; Inman & Marlowe, 2004; Borman & Dowling, 2006; Curry & O’Brien, 2012).

Personal and Professional Needs that Influence Teachers’ Intentions to Continue Teaching

Researchers have determined several needs that influence teachers’ intentions to continue teaching. Teacher’s knowledge and skills in teaching, perception about their intention to remain teaching, teaching value, teaching responsibilities, self-efficacy, and teacher preparedness are identified as teachers’ personal and professional needs that influence their intentions to remain in teaching (Battle & Looney, 2014; Walker, Garton, & Kitchel, 2004; Darling–Hammond et al. 2002; Haberman, 1989; Battle & Wigfield, 2003). Knowledge can be defined as knowing / gaining information of something whereas skills is about doing an activity that involves practice or training (Merriam Webster Dictionary, 2018). Previous studies have reported that teachers with knowledge and skills were expected to persist in teaching (Haberman, 1989; Darling-Hammond, 1990; Battle & Looney, 2014).
Delnero & Montgomery (2001) conducted a study that incorporated teacher’s responsibilities along with their knowledge and skills in teaching. For example, teaching requires teachers to have knowledge and skills in subject matters, review curriculum, design lesson plans, provide instruction, conduct students’ learning assessment, advise students, communicate with parents, and maintain records of student learning. In addition, Roness (2011) mentioned that the quality of experiences at the earliest stage in their career can determine a teacher’s intention to stay. This statement corroborates previous research, which found that the initial year of one’s teaching experience is important for professional development, career satisfaction, and longevity (McCormack, Gore, and Thomas, 2006).

Teachers’ preparedness and self-efficacy were found to be influential factors for teachers to continue teaching (Darling–Hammond et al. 2002). Teachers with sufficient teacher preparedness can produce effective lessons that will benefit students, as well as satisfy themselves as teachers. Bandura (1977) claimed that a positive relationship between new teachers and their students would enhance the students’ quest for learning, which contributes to the teachers’ feelings of fulfillment. Adding to this, Monk (1994) found a positive correlation between teachers’ subject matter preparedness and student achievement.

Battle & Looney (2014) studied teachers’ intentions to remain in teaching by investigating teachers’ values and perceptions of teaching and concluded that there was a positive relationship between intrinsic-attainment and utility value, and negative relationship between cost and intentions to continue teaching. Roness (2011) found that the feeling of happiness and positive perception retained teachers longer. New teachers perceived difficulty in teaching, task assignments, and work conditions as important factors that influenced them to stay (Hope, 1999). In addition, Kuty & Schulz (2006) and Huberman (1989) described
the first year or two of teaching as “a time of survival”. Negative perceptions of teaching might cause a new teacher to leave early (Skaalvik, 2008). The mismatch between teachers’ expectations and the reality of teaching, might also make teachers leave the profession early (Chambers, Coles & Roper, 2002). In agricultural education, Delnero & Montgomery (2001) conducted research on secondary agriculture teachers’ perceptions of their work and found teachers perceived their teaching jobs in three different ways: coaching activities, teaching academics, and being vocational mentors.

**Teachers’ Plan to Remain in Teaching**

Previous studies show that teachers’ plans to remain in teaching are associated with their intention and commitment to teaching (Delnero & Montgomery 2001). Rots et al. (2007) linked commitment and teacher’s intention to teach. They also underlined the significance of teacher commitment in addressing teacher attrition problems. Data from previous findings about beginning teachers’ plans to stay consistently show that many teachers planned to quit teaching after only five years of service (Ingersoll et al. 2003; Hughes, 2012; Whittington, McConnell & Knobloch, 2006). The results from the studies indicate that experienced teachers are more likely to continue teaching until retirement age.

Studies about agriculture teacher commitment and their intent to remain in the teaching profession found four important factors including: agriculture work experience, commitment to teach agriculture, self-efficacy, and human capital investment in teaching agriculture. (Edward & Briers; Knobloch & Whittington, 2003). Agriculture teachers in Iowa might have different intentions to continue teaching, but far too little attention has been paid to this type of study.
Therefore, this research was conducted to understand personal and professional needs that influence high school agriculture teachers’ intentions to continue to teach in Iowa.

**Conceptual Framework**

The conceptual framework for this study was derived from the expectancy-value theory. Expectancy-value theory emphasizes that individual choice, persistence, and performance explain how well individuals believe, perform, and value an activity (Wigfield and Eccles, 2000). Eccles et al., (1983) used the expectancy-value theory to investigate children’s achievement performances, choices, and studies in mathematics.

Several studies have used expectancy-value theory as a framework to investigate the prediction of outcomes. In different studies, this theory was adopted to examine the career process, work outcomes, and selecting jobs (Feather, 1992). Expectancy-value theory was used as framework to study the predictors of future employment status (Lynd- Stevenson, 1999). In addition, Borders, Earleywine, and Huey (2004) predicted problematic behaviors of high school students by using expectancy-value theory. Eccles (1987) also extended expectancy-value theory to study the issues of career choice, which suggest that individual values and expectations are important determinants in choosing a career.

The concept of task value in the expectancy value theory is appropriate to predict individual’s intentions (Battle & Wigfield, 2003; Eccless et al., 1983). The task value construct in the theory consists of utility, importance, and interest items, which collectively affect an individual’s outcome achievement. A previous study used the task value portion to predict teachers’ intentions to continue teaching (Battle & Looney, 2014). Parsons, Adler,
and Meece (1984) in their study of students’ educational plans, found that task value emerged as a significant predictor.

An adaption of the subjective task value concept in the expectancy-value theory was used as a guide to conceptually frame the present research study. In this research, the conceptual framework consists of demographic variables, curriculum for agricultural science education (CASE) and non-CASE teachers, and personal and professional needs that influence teachers’ intentions to continue teaching (Figure 1). These needs include teachers’ knowledge and skills, perception of intention to remain in teaching, early teaching experience, teaching responsibilities, and teaching value. The selection of these needs was based on a study done by Battle and Looney (2014) and Battle & Wigfield (2003).

Figure 1: Conceptual framework of personal and professional needs that influence high school agriculture teachers’ intentions to continue teaching.
Purpose and Objectives

The purpose of the study was to investigate the personal and professional needs that influence high school agriculture teachers’ intentions to continue teaching. Objectives of the study were as follows:

1. Describe personal characteristics of agriculture teachers in terms of age, gender, educational levels, years of teaching experience, years of teaching agriculture courses, use of CASE curriculum, and teachers’ plans to remain in teaching.

2. Describe the personal and professional needs that influence teachers’ intentions to continue teaching.

3. Determine the relationship between perception of knowledge and skills, and teachers’ plans to remain teaching.

4. Predict teachers’ plans to remain teaching from the personal and professional needs that influence their intentions to continue teaching.

Methodology

The purpose of this descriptive survey study was to investigate the personal and professional needs that influence high school agriculture teachers’ intentions to continue teaching. This was a census study that focused on 252 high school agriculture teachers in Iowa. The list of participants was obtained from the Iowa FFA Association.

Instrument

A questionnaire was developed using the Qualtrics web-based platform. The questionnaire consisted of four parts; however, only Parts 2 and 4 were used in the
manuscript. Part 2 of the online questionnaire was adapted from the work of previous scholars (Kyriacou, 2007; Battle & Looney, 2014). It contained Likert-type and multiple-choice items. Eight Likert-type items measuring personal and professional needs that influence teachers’ intentions to teach. Response options ranged from 1= strongly disagree, 2= disagree, 3=agree, and 4=strongly agree. Three multiple-choice questions were used to measure knowledge and skills, early teaching experience, and aspiration to move into administration, respectively. Part 4 contained several demographic items, and one item focused on teachers’ plans to remain in teaching.

Validity
A panel of three experts in agricultural education was appointed to review the validity of the survey. Two experts were from Iowa State University, and one expert was from West Virginia University. One expert was satisfied with the instrument face, content, and construct validity, while the other two experts recommended a few changes. The researcher made the changes as recommended by the experts, and resent the questionnaire to the panel. All three of the experts agreed that the questionnaire was face, content, and construct valid.

Reliability
A pilot study was conducted before formal data collection. The pilot study involved 10 high school agriculture teachers in Iowa. Internal consistency of needs that influence high school agriculture teachers’ intentions to continue teaching was computed using Cronbach’s alpha. The reliability coefficient was .75.
Data Collection

In the formal data collection, the researcher followed the tailored design method (Dillman et al., 2009). The pre-notification email was sent to 252 agriculture teachers in Iowa. Three days later, the researcher sent a second email via Qualtrics that included information about the study, and a URL link to the questionnaire. Ten days later, a first-reminder was sent via Qualtrics to the non-respondents.

After an additional week, a second reminder email was sent via Qualtrics to ask for help from the non-respondent teachers. A postcard that included the URL link to the survey was sent through the U.S. Postal Service to the non-responding teachers as a final contact seven days after the second reminder. The researcher used a postcard as a different mode to contact the non-respondents to increase the response rate (Dillman et al., 2009). The final response rate for all five methods of contact was 47%, \( n = 119 \). One week after the final contact, the online questionnaire was closed.

Data Analysis

The participant answers from online questionnaires were gathered from Qualtrics, and the data were processed and analysed using the Statistical Packages for Social Science (SPSS) version 23.0. After the formal study data collection, the Cronbach alpha value was used again to measure reliability on needs that influence agriculture teachers’ intentions to continue teaching. The reliability coefficient was = .73.

The researcher compared early responses (n= 60, the first half participants) to late responses (n=59, the second half participants) using an independent samples t-test. Results show that there was no significant difference between early and late respondents. The
findings from comparison early and late provides some evidence of representation for the entire population agriculture teachers in Iowa (Lindner, Murphy & Briers, 2001).

This was a census study, and therefore the researcher acknowledges some questions could be raised about whether inferential statistics were appropriate. Only 119 agriculture teachers completed the questionnaire, which ended up as a sample from the population of 252 teachers. In agricultural education, it is customary to use inferential statistics in similar situations. It is recommended the readers interpret the findings given this context. For example, in the regression model emphasis coefficients presented and less on the p-value and standard error.

Descriptive statistics including frequencies, means, and standard deviations were used for the first and second objective. Research objective three was tested using the chi-square test for association. Multinomial stepwise logistic regression was used to predict teachers’ plans to remain teaching from the personal and professional needs that influence intention to continue teaching. The level of significance was .05 for the entire statistical test.

**Findings**

*Objective one*

*Describe personal characteristics of agriculture teachers in terms of age, gender, educational levels, years of teaching experience, years of teaching agriculture courses, use of CASE curriculum, and teachers’ plans to remain in teaching.*

The participants in the study consisted of 119 high school agriculture teachers from Iowa. Of the 199 teachers, \((f = 63, 52.9\%)\) identified as female and \((f = 56, 47.1\%)\) identified as male. The teachers ranged in age from 21 to 65 years. The average age was 38.15 with a standard deviation of 13.12. Teachers were asked to indicate their highest level of academic
attainment. For a majority (63%) of teachers the bachelor’s degree was their highest level of academic attainment, for 37% of teachers the highest level was a master’s degree. Regarding years of teaching experience, the experience ranged from one to 40 years with an average of 14.11 and a standard deviation of 12.49. Teachers were also asked to indicate the number of years they taught agricultural education. The results show that years of teaching agriculture courses ranged from 0 to 40 years with an average mean of 13.80 and a standard deviation of 12.52.

Table 1

<table>
<thead>
<tr>
<th>Variable</th>
<th>Minimum</th>
<th>Maximum</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>21</td>
<td>65</td>
<td>38.15</td>
<td>13.12</td>
</tr>
<tr>
<td>Years of Teaching Experience</td>
<td>1</td>
<td>40</td>
<td>14.11</td>
<td>12.49</td>
</tr>
<tr>
<td>Years of Teaching Agriculture Courses</td>
<td>0</td>
<td>40</td>
<td>13.80</td>
<td>12.52</td>
</tr>
</tbody>
</table>

Table 2 shows additional information on teachers’ personal characteristics. The number of teachers who use the CASE curriculum was 85 (71.4%). A majority (f = 71, 59.7%) of the respondents taught “Introduction to Agriculture, Food, and Natural Resources”. This was followed by those teachers who taught CASE “Principles of Agriculture Science Animal” (f = 42, 35.3%), and teachers who taught CASE “Principles of Agricultural Science Plant” (f = 30, 31.9%). Almost 20% (f = 22, 18.5%) of the respondents taught CASE “Natural Resources and Ecology” and a small number of teachers (f = 7, 5.9%) taught CASE “Animal and Plant Biotechnology”. Nine teachers (7.6%) taught CASE “Food Science and Safety” and “Agricultural Power and Technology”. Seven (1.7%) taught the CASE “Agricultural Research and Development” courses.
Many teachers plan to be in teaching for 11 or more years ($f = 54, 45.4\%$), whereas $35.3\% (f = 42)$ of agriculture teachers plan to teach for one to five years. A small number of agriculture teachers plan to remain teaching for six to ten years ($f = 21, 17.6\%$).

Table 2

*Selected Personal Characteristics of High School Agriculture Teachers (n= 119)*

<table>
<thead>
<tr>
<th>Variables</th>
<th>$f$</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching Agriculture using CASE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>85</td>
<td>71.4</td>
</tr>
<tr>
<td>No</td>
<td>34</td>
<td>28.6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of Agriculture Courses Taught by High School Agriculture Teachers using CASE Curriculum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to Agriculture, Food, and Natural Resources</td>
</tr>
<tr>
<td>Principles of Agriculture Science Animal</td>
</tr>
<tr>
<td>Principles of Agricultural Science Plant</td>
</tr>
<tr>
<td>Natural Resources and Ecology</td>
</tr>
<tr>
<td>Food Science and Safety</td>
</tr>
<tr>
<td>Animal and Plant Biotechnology</td>
</tr>
<tr>
<td>Agricultural Power and Technology</td>
</tr>
<tr>
<td>Agricultural Research and Development</td>
</tr>
<tr>
<td>Mechanical System in Agriculture</td>
</tr>
<tr>
<td>Environmental Science Issues</td>
</tr>
<tr>
<td>Agriculture Business and Foundations</td>
</tr>
<tr>
<td>Agricultural Marketing and Communications</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Teachers’ Plans to Remain Teaching</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1-5 years</td>
<td>42</td>
</tr>
<tr>
<td>6-10 years</td>
<td>21</td>
</tr>
<tr>
<td>11 or more years</td>
<td>54</td>
</tr>
</tbody>
</table>

**Objective 2**

Describe the personal and professional needs that influence teachers’ intentions to continue teaching.

The teachers responded to eight statements representing personal and professional needs that influence teachers’ intentions to continue teaching. A Likert-type scale with four-points ranging from strongly disagree (1) to strongly agree (4) was used. A decision rule was created to interpret scores (Table 3).
Table 3

**Decision Rule to Interpret the Mean Scores for the Likert-type Scale**

<table>
<thead>
<tr>
<th>Likert-type categories</th>
<th>Mean Score</th>
<th>Interpretation of the statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.00 – 1.5</td>
<td>Strongly Disagree (Negative)</td>
</tr>
<tr>
<td>2</td>
<td>1.51 – 2.5</td>
<td>Disagree (Negative)</td>
</tr>
<tr>
<td>3</td>
<td>2.51 – 3.5</td>
<td>Agree (Positive)</td>
</tr>
<tr>
<td>4</td>
<td>3.51 – 4.0</td>
<td>Strongly Agree (Positive)</td>
</tr>
</tbody>
</table>

Table 4 below shows the descriptive statistics of mean and standard deviation for teachers’ personal and professional needs that influence their intentions to stay in the teaching profession. The grand mean for the needs was 2.64 with a standard deviation of 0.64. This finding suggests that overall the needs slightly influenced teachers’ intentions to teach.

Regarding the individual needs, agriculture teachers provided the highest mean score for the item “I want to stay because I believe that I have the ability to positively affect student performance,” \( M = 3.29, SD = .56 \). It was followed by “I want to stay because teaching is the right career for me,” \( M = 2.99, SD = .66 \). Agriculture teachers rated the item “I will end up getting promotion if I stay in teaching,” \( M = 1.97, SD = .62 \) as the lowest need that influenced their intentions to teach.

Table 4

**Personal and Professional Needs that Influence High School Agriculture Teachers’ Intention to Continue Teaching (n=119)**

<table>
<thead>
<tr>
<th>Questions</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I want to stay because I believe that I have the ability to positively affect student performance.</td>
<td>3.29</td>
<td>.56</td>
<td>Positive</td>
</tr>
<tr>
<td>I want to stay because teaching is the right career for me.</td>
<td>2.99</td>
<td>.66</td>
<td>Positive</td>
</tr>
<tr>
<td>Teaching fulfills my needs.</td>
<td>2.85</td>
<td>.55</td>
<td>Positive</td>
</tr>
</tbody>
</table>
Table 4 continued

<table>
<thead>
<tr>
<th>Questions</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staying in teaching is a part of what will make me feel good about myself in the future.</td>
<td>2.82</td>
<td>.62</td>
<td>Positive</td>
</tr>
<tr>
<td>Teaching will help me fulfill future personal objectives.</td>
<td>2.66</td>
<td>.69</td>
<td>Positive</td>
</tr>
<tr>
<td>I choose to stay in teaching because it is important to me to be recognized as a teacher.</td>
<td>2.34</td>
<td>.72</td>
<td>Negative</td>
</tr>
<tr>
<td>My family expects me to stay in teaching.</td>
<td>2.16</td>
<td>.69</td>
<td>Negative</td>
</tr>
<tr>
<td>I will end up getting a promotion if I stay in teaching.</td>
<td>1.97</td>
<td>.62</td>
<td>Negative</td>
</tr>
<tr>
<td>Total</td>
<td>2.64</td>
<td>.64</td>
<td>Positive</td>
</tr>
</tbody>
</table>

Note: Based on scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree

As shown in Table 5, most high school agriculture teachers indicated that knowledge of the subject and skills in teaching were important for their intentions to continue teaching, \( f = 73, 61.3\% \). Most \( f = 103, 86.6\% \), of the teachers indicated that they had a negative experience early in their career and most \( f = 105, 88.2\% \) of teachers identified that they have no aspiration of moving into administration.

Table 5  

Teachers’ Perception of Knowledge and Skills, Early Teaching Experience, and Aspiration Relative to School Management \((n=119)\)

<table>
<thead>
<tr>
<th>Variables</th>
<th>( f )</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Perception of importance</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge of the subject is most important</td>
<td>5</td>
<td>4.2</td>
</tr>
<tr>
<td>Skills in teaching are most important</td>
<td>41</td>
<td>34.5</td>
</tr>
<tr>
<td>Both are equally important</td>
<td>73</td>
<td>61.3</td>
</tr>
<tr>
<td><strong>Had negative experience in the first years of teaching</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>103</td>
<td>86.6</td>
</tr>
<tr>
<td>No</td>
<td>16</td>
<td>13.4</td>
</tr>
<tr>
<td><strong>Have aspirations of moving into administration</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>14</td>
<td>11.8</td>
</tr>
<tr>
<td>No</td>
<td>105</td>
<td>88.2</td>
</tr>
</tbody>
</table>
Objective 3

Determine the relationship between perception of knowledge and skills, and teachers’ plans to remain teaching.

Results of the chi-square test of associations are illustrated in the contingency Table 6. Of five agriculture teachers who indicated their knowledge of the subject was important, only two of the teachers determined they would stay for 11 or more years. Regarding the 41 teachers who stated their skills in teaching were important, half of them planned to remain for 11 or more years. Referring to the 73 teachers who indicated that both components (knowledge and skills) were important, 32 of them plan to stay until their retirement age (11 or more years). The relationship was not significant. The value of Cramer’s V was .09, which indicated a weak association (Rea & Parker, 1992).

Table 6

Perception of Knowledge and Skills by Plans to Remain in Teaching

<table>
<thead>
<tr>
<th>Variables</th>
<th>1-5 years</th>
<th>6-10 years</th>
<th>11 or more years</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge of the subject</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Skills in Teaching</td>
<td>14</td>
<td>7</td>
<td>20</td>
<td>41</td>
</tr>
<tr>
<td>Both are equally important</td>
<td>27</td>
<td>14</td>
<td>32</td>
<td>73</td>
</tr>
<tr>
<td>Total</td>
<td>44</td>
<td>21</td>
<td>54</td>
<td>119</td>
</tr>
</tbody>
</table>

Note: Numbers represent frequencies; Cramer’s V = .09, p = .74

Objective 4

Predict teachers’ plans to remain teaching from the personal and professional needs that influence their intentions to continue teaching.
Multinomial logistic regression was used to predict three different plans to stay in teaching from the needs that influence teachers’ intentions to continue teaching. Predictor variables that were considered and retained after the multinomial logistic regression analysis are listed in Table 7. The dependent variable, plans to stay in teaching had three levels: 1-5 years, 6-10 years, and 11 or more years. The baseline category was 1-5 years plan to stay category. Multinomial logistic regression using forward entry stepwise method was used to reduce eight predictor variables to four variables. The assumptions were met and the correlational matrix for predictor variables shows no issues with multicollinearity.

The results found the model was statistically significant ($\chi^2 = 39.97; p = 0.01$) where Pseudo R2 (Nagelkerke) was .31 (Table 8). Findings from odds ratio was used to interpret the multinomial logistic regression analysis for teachers’ plans to stay in 6-10 years relative to 1-5 years’ plan. Results indicate that agriculture teachers who have a one unit increase in their scale score with the variable “stay in teaching to be recognized as teacher,” the odds of a teacher likely to stay for 6-10 years decreases by a factor of 0.27 while other variables are held constant. The odds ratio depicted teachers with this variable were likely preferring a short-term plan (1-5 years) to remain in teaching.

In addition, results from odds ratio was used to interpret the multinomial logistic regression analysis for teachers’ plans to stay in 11 or more years relative to 1-5 years. Agriculture teachers who have a one unit increase in their scale with the variable “stay in teaching makes me feel good about oneself in the future”, the odds of the teachers planning to stay for more 11 years increases by a factor of 2.80 while other variables are held constant.

Results show that agriculture teachers who have a one unit increase in their scale score with the variable “stay in teaching to be recognized as a teacher”, the odds of the teachers
likely to stay in 11 or more years decreases by a factor of 0.22 while other variables are held constant. This odds ratio indicated teachers were more likely to stay in 1-5 years. Agriculture teachers who have a one unit increase in their scale score with the variable “stay because teaching is a right career,” the odds of teachers likely to stay in 11 more years increases by a factor of 2.99 while other variables are held constant. Adding to this, teachers who have a one unit increase in their scale score with the variable “family expects to stay in teaching,” the odds of the teachers planning to stay in 11 or more years decreases by a factor 0.45 while other variables are held constant.

The classification table indicates how accurately the model predicts the category of three different plans to stay in teaching. The model correctly classified 59.7% of agriculture teachers (Table 9). The overall correct classification rate shows a 16.4% improvement over selecting the model category and 34.1% improvement if the dependent variable is held constant. It would be more accurate to predict agriculture teachers’ plans in the 11 or more-years category. Around 74.1% of teachers who were observed in 11 or more years plan category were predicted to be in this category. The false positive rate was 34% where the 15 cases that were observed to be in 1-5 years category were predicted to be in different categories. The false negative rate was low 16.4%. Only 16.4% of teachers that were observed in the 6-10 years and 11 or more years categories were predicted to be in the 1-5 years plan category.

The classification table shows the model was best at classifying teachers who plan to stay in teaching for 11 or more years plan category (74.1%), and 1-5 years category (65.9%). The model does poorly at classifying teacher in the 6-10 years category indicating other predictors might better classify teachers in this category.
Table 7

**Variables Considered and Retained for Predicting Teachers' Plans to Stay in Teaching**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Variables retained in the final model by stepwise logistic regression.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Factors that Influence Agriculture Teachers Intentions’ to Continue Teaching</strong></td>
<td></td>
</tr>
<tr>
<td>1. Stay because I believe that I have the ability to positively affect student performance.</td>
<td></td>
</tr>
<tr>
<td>2. Stay because teaching is a right career.</td>
<td>2. Stay because teaching is a right career.</td>
</tr>
<tr>
<td>3. Teaching fulfills my needs.</td>
<td></td>
</tr>
<tr>
<td>4. Staying in teaching because it makes me feel good about myself in the future.</td>
<td>4. Staying in teaching because it makes me feel good about myself in the future.</td>
</tr>
<tr>
<td>5. Teaching will help me fulfill future personal objectives.</td>
<td></td>
</tr>
<tr>
<td>6. Stay in teaching to be recognized as a teacher.</td>
<td>6. Stay in teaching to be recognized as a teacher.</td>
</tr>
<tr>
<td>7. Family expects me to stay in teaching.</td>
<td>7. Family expects me to stay in teaching.</td>
</tr>
<tr>
<td>8. I will end up getting a promotion if I stay in teaching.</td>
<td></td>
</tr>
</tbody>
</table>

Table 8

**Multinomial Logistic Regression (Model included significant variables at .05 level of significance)**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Estimate</th>
<th>SE</th>
<th>Wald</th>
<th>df</th>
<th>P</th>
<th>Odd. Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plans to Continue Teaching</td>
<td>Intercept</td>
<td>1.31</td>
<td>1.98</td>
<td>.438</td>
<td>1</td>
<td>0.51</td>
</tr>
<tr>
<td>6 to 10 years</td>
<td>Stay in teaching to be recognized as a teacher</td>
<td>-1.32</td>
<td>0.56</td>
<td>5.60</td>
<td>1</td>
<td>0.02</td>
</tr>
<tr>
<td>11 or more years</td>
<td>Intercept</td>
<td>-4.12</td>
<td>1.84</td>
<td>5.03</td>
<td>1</td>
<td>0.03</td>
</tr>
<tr>
<td></td>
<td>Stay in teaching make feel good about oneself in the future.</td>
<td>1.03</td>
<td>0.50</td>
<td>4.19</td>
<td>1</td>
<td>0.04</td>
</tr>
</tbody>
</table>
Table 8 continued

<table>
<thead>
<tr>
<th>Variable</th>
<th>Estimate</th>
<th>SE</th>
<th>Wald</th>
<th>df</th>
<th>P</th>
<th>Odd. Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stay in teaching to be recognize as a teacher</td>
<td>-1.51</td>
<td>0.46</td>
<td>11.02</td>
<td>1</td>
<td>0.01</td>
<td>0.22</td>
</tr>
<tr>
<td>Stay because teaching is a right career</td>
<td>1.09</td>
<td>0.52</td>
<td>4.47</td>
<td>1</td>
<td>0.04</td>
<td>2.99</td>
</tr>
<tr>
<td>Family expects to stay in teaching</td>
<td>-0.80</td>
<td>0.38</td>
<td>4.44</td>
<td>1</td>
<td>0.04</td>
<td>0.45</td>
</tr>
</tbody>
</table>

Note: (n= 119). The reference category is 1- 5 years. Model fit ($\chi^2 = 39.97; p = 0.01$)

Table 9

Classification Table Model

<table>
<thead>
<tr>
<th>Observed</th>
<th>Predicted</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1-5 years</td>
</tr>
<tr>
<td>1-5 years</td>
<td>29</td>
</tr>
<tr>
<td>6-10 years</td>
<td>9</td>
</tr>
<tr>
<td>11 or more years</td>
<td>13</td>
</tr>
<tr>
<td>Overall %</td>
<td>42.9%</td>
</tr>
</tbody>
</table>

Conclusions, Implications, and Recommendations

The purpose of the study was to investigate the personal and professional needs that influence high school teachers’ intentions to continue teaching in Iowa. The findings of this study show that many teachers plan to teach for 11 or more years. This positive finding corroborates a previous study conducted by Hughes (2012) who found that 83.5% of teachers plan to teach until they reach their retirement age. In contrast, this finding disagrees with Guarino (1996) and Johnson & Birkeland (2003). They found teachers did not plan to teach for their entire career and, viewed teaching as a short-term career. In this study, several
teachers, \((f = 42, 35.3\%)\) planned to teach for a short time period (1-5 years). This is a significant number of teachers and their loss will contribute to the teacher shortage.

More than three quarters \(n = 85, (71.4\%)\) of agriculture teachers used CASE curriculum to teach, and the majority teach “Introduction to Agriculture, Food, and Natural Resources” (AFNR). The increasing trend of agriculture teachers in Iowa becoming CASE curriculum certified and using CASE to teach will benefit the teachers and the students in the classroom. The National Association of Agricultural Educators (NAAE) Communities of Practice (2011) reported growth and expansion of the CASE program in 17 states that implemented foundational CASE courses for plant and animal science. Iowa programs with CASE certification increased by 30% from 2011 to 2013 (IAAE, 2018).

The individual needs show that teachers are more likely to be influenced to continue to teach because they believe that they can positively affect student performance. This finding is consistent with a previous study that reported teachers appreciate student achievement and have a positive relationship with students (Taylor, Jardine, McNaney, Lehman and Fok-Chan, 2004). The agriculture teachers intend to stay most likely because they see the teaching value, want to serve well, and contribute to their students.

Teachers indicated that knowledge and skills were important needs for their intentions to remain teaching. The finding is an agreement with previous studies that found teachers with knowledge and skills intend to remain in teaching (Haberman, 1989; Darling-Hammond, 1990; Battle & Looney, 2014; Delnero & Montgomery, 2001). It is somewhat surprising that almost all teachers indicated they had a negative early teaching experience. However, this finding supports Kutcy & Schulz (2006) and Haberman (1989) that described the first two years of teaching experiences as a survival time. It is recommended that school
administrators and educators provide full support to novice teachers and make them feel appreciated. In addition, partnerships between teacher educators and high school teachers can provide teachers with survival skills.

There was no significant relationship between teachers’ knowledge and skills in teaching with teachers’ plans to continue teaching. This finding did not support the subjective value task construct under expectancy-value theory. This is due to the present findings that indicate knowledge and skills cannot serve as contexts variables for agriculture teachers’ plans to continue teaching. Interestingly, the contingency table illustrated the majority of teachers indicated both knowledge and skills were important for them to continue teaching, and a significant number of these teachers plan to stay until they reach their retirement age.

The last objective sought to determine the contributions of personal and professional needs that influence teachers’ intentions to continue teaching on teachers’ plans to remain teaching. The influential needs that were significant predictors of teachers’ plans to continue teaching included teacher recognition, teaching as a right career, family expectation to stay, and teaching makes oneself feel good.

From the result, teachers who agreed with these needs: teaching makes oneself feel good, and teaching as a right career are more likely to stay in the career long enough until they retire. This study confirms previous research about teachers’ self-esteem, feeling good, and acting consistently with their beliefs when teaching (Nias, 1996). Peske, Liu, Johnson, Kauffman, and Kardos (2001) found that teachers who decided teaching was the right career for them would first consider the support and compensation being giving to them by their career. In contrast, teachers that believed these needs: teacher recognition and family
expectation to stay are more likely to report their intentions to leave the profession early in one to five years.

The findings show that teachers have varying intentions to stay in the field of education. Policy makers should create opportunities or pathways for teachers that plan to teach for long-term and short-term periods. This effort would benefit the agriculture teachers by providing supports and heightening teachers’ commitment to teach.

**Recommendations for future research include:**

1. The study should be replicated with agriculture teachers in other states.

2. Future studies should determine school administrators’ perceptions about teachers’ intentions to stay.

3. Future studies could employ qualitative methods to gain a deeper understanding on teachers’ personal and professional needs and their plan to continue teaching for long-term careers.

**References**


CHAPTER V
HIGH SCHOOL AGRICULTURE TEACHERS’ CAREER SATISFACTION AND ITS RELATIONSHIP WITH THEIR PLANS TO REMAIN IN TEACHING

A paper prepared for submission to the Journal of Agricultural Education
Normala Ismail & Gregory S. Miller

Abstract

The purpose of the study was to evaluate the career satisfaction of high school agriculture teachers and predict their plans to stay in teaching. A descriptive census study was conducted on agriculture teachers (N = 252) utilizing an online validated questionnaire. One hundred nineteen teachers completed the questionnaire. A four-point Likert-type scale ranging from 1 = strongly disagree, 2 = disagree, 3 = agree, and 4 = strongly agree was used to measure teachers’ career satisfaction in teaching. The grand mean and standard deviation was 2.88(.32) for the career satisfaction items indicating the items collectively influenced teachers to remain in teaching. More than half of teachers plan to remain teaching for 11 or more years. Age, gender, years of teaching experience, and selected career satisfaction in teaching variables were entered into multinomial logistic regression forward stepwise method to predict the likelihood of teachers’ plans to remain in teaching. The model was statistically significant ($\chi^2 = 27.51; p < 0.01$) and 24% of variance (Pseudo $R^2 = .24$) can be explained by two significant predictors: years of teaching experience ($p = 0.00$), and looking forward to continuing teaching ($p = 0.01$). Further analysis on years of teaching experience shows that a substantial number of late-career teachers were planning to stay in a short time. Mid-career teachers were more likely planning to teach for 11 or more years. Findings are consistent with literature that reported years of teaching experience was a predictor for teacher retention.

Introduction

Over the past 30 years, a teacher retention crisis has been widely reported in the United States. One primary issue with teacher retention is a shortage of enough qualified teachers. Retaining qualified teachers is very difficult and this problem creates issues with school staffing (Hughes, 2012 & Ingersoll, 2001). The teaching profession has a higher turnover rate compared to other careers. In a teacher follow-up study, every year there is approximately a 3.5 million teacher turnover rate (Ingersoll, 2001; National Center for
Educational Statistics, 2001 & National Commission on Teaching and America’s Future, 2003). Large amounts of money have been allocated for recruiting, hiring, and training new teachers to reduce the shortage (Borman & Dowling, 2006).

A national shortage of agriculture teachers has been reported (Kantrovich, 2010). The shortage is not only due to retirement, but is also due to other reasons. The 2016 National Agricultural Education Supply and Demand study reported 66 full-time agriculture teacher positions were needed to meet the demand in school-based agriculture education (SBAE). Losing qualified, talented agriculture teachers eventually affects students’ success (Allen, 2005; Ingersoll, 2001; Mishel, Alegretto, & Corcoran, 2008).

Teachers remain in teaching for a variety of reasons. Teacher characteristics, school environment culture, work factors, and professional development are several reasons reported in the literature (Billingsley & Cross, 1992; Weiss, 1999; Adam, 1996; Henke & Zahn, & Carroll, 2001; Ingersoll, 2001; Inman & Marlow, 2004; Borman & Dowling, 2006; Guarino et al. 2006 & Smalley & Smith, 2017). Research to date has not yet determined the career satisfaction of high school agriculture teachers in Iowa. Hence, this study examines high school agriculture teachers’ career satisfaction in teaching. Understanding agriculture teachers’ career satisfaction in the teaching profession may contribute to an increased retention rate. This study supports the National Association for Agricultural Educator’s (NAAE) national research agenda, which emphasizes producing enough agricultural educators to address the challenges in the 21st century (Roberts & Brashears, 2016).
Literature Review

Teacher Characteristics and Retention

A considerable amount of literature has been published regarding teacher retention (Billingsley & Cross, 1992; Weiss, 1999; Adam, 1996; Henke & Zahn, & Carroll, 2001; Ingersoll, 2001; Inman & Marlow, 2004; Borman & Dowling, 2006; Guarino et al. 2006). Teacher characteristics such as gender, age, years of teaching experience, academic background, and ethnicity affect teacher retention (Hughes, 2012; Adams, 1996; Hanushek, Kain, & Rivkin, 2004; Ingersoll, 2001; Kirby, Grissmer, & Hudson, 1991; Gritz &Theobald, 1996; Murnane, Singer, & Willet, 1989).

Many researchers have identified age and years of experience as significant variables that contribute to teacher retention (Hanushek, Kain, & Rivkin, 2004; Kirby, Grissmer, & Hudson, 1991; Adams, 1996 & Hughes, 2012). Previous studies reported that younger teachers leave the profession because of lower job satisfaction, family, and stress problems. While older teachers leave teaching for retirement. The U-shaped age and attrition plot illustrated this phenomenon (Guarino et al., 1991; 2006; Hanushek & Rivkin, 2007; Watson, Harper, Ratliff & Singleton, 2010). Findings show that age and years of experience have a positive relationship with teacher retention (Hughes, 2012). However, Grissmer and Kirby’s (1991) theory proposed that years of teaching experience is a more accurate predictor for teacher retention than age.

Previous studies indicated that early teaching experience influenced teachers’ perception about the likelihood staying in secondary schools (Warnick et al., 2010). Teachers with a positive early teaching experience planned to stay longer than those who had a negative experience (Chapman, 1983). This statement was supported by studies in Texas that
found approximately 30% of teachers left the profession within two years of a negative teaching experience (Kirby et al., 1991 & Adams, 1996). Regarding to gender, men were more likely to stay longer in the profession (Ingersoll, 2001; Gritz & Theobald, 1996). Contrary to this, Henke, Chen, Geis and Knepper (2000) found that there is no significant relationship between gender and retention. In terms of ethnicity and teacher retention, higher retention for minority teachers has been reported (Borman & Dowling, 2006; Adams 1996 & Kukla-Acevedo, 2009). However, Henke, Chen, Geis and Knepper (2000) found that there is no significant relationship between ethnicity and teacher retention. Findings related to teacher ethnicity, gender and teacher retention were not consistent.

With respect to academic background, retention is also influenced by teachers’ academic achievement. Previous literature reviews show that retention rates among teachers varied by the level of academic achievement received by them (Guarino et al. 2006). Teachers who remain in teaching do not have the highest levels of academic achievement (Hughes, 2012). Podgursky (2004) found teachers with high levels of academic achievement are less likely to remain in teaching. Borman & Dowling (2006) who found graduate degree holders were more likely to leave teaching support this finding. However, two studies found that there was no significant correlation between academic attainment and teacher retention (Latham & Vogt, 2007 & Perrachione et al., 2008). Therefore, previous literature emerged that offers different findings and inconsistency regarding teachers’ academic attainment in relation to teacher retention.
Reasons Agriculture Teachers Remain in Teaching

The National Association of Agricultural Educators (NAAE) categorized Agriculture teachers’ life cycles into three different major phases: early-career, mid-career, and late career. Each of these phases have their own unique characteristic professional life cycles. At early-career stage, teachers are in survival mode and carrying out teaching task to impact their students. Meanwhile, mid-career is referring to stabilization and experimentation. At this stage, teachers have some confidence, predict patterns of teaching, experiment with their teaching through new activities and approaches, and have more experiences that will reflect their own careers and have plans to continue teaching. The late career teachers’ stage is referred to as serenity. Teachers have many years of teaching experience that make them feel confident and comfortable with their classrooms and work (White, 2008).

Various studies have assessed school characteristics such as school administrator support, colleague support, and work factors as the main reasons for teacher retention (Ingersoll & Smith 2003; U.S Department of Education, 1999). Many studies reported that school administrators have enormous effects on teacher retention (Borman & Dowling, 2006; Wynn et al., 2007; Kucla – Acevedo, 2009). In a study of new novice teachers, Wynn et al. (2007) figured out that 43% of teachers mentioned school administrative support as the reason for them to stay or leave teaching. Similarly, a study from Ingersoll & Smith (2003) found that poor administrative support is a major reason that beginning teachers leave their careers. Teachers would like to have more autonomy, better administrative support, and effective communications (Hughes, 2012). Considering this evidence, the literature suggests that school administration support has a substantial impact on teacher retention.
In addition, few studies have cited social aspects such as colleague support, as influencers for teacher retention. Hasselquist, Herndon & Kitchel (2017) found that colleague support was associated with new agriculture teachers’ self-efficacy. Colleague support seems very helpful for agriculture teachers who are involved in their communities. Moreover, social aspects of teaching, such as collegial collaboration contribute to teachers’ decisions to persist (Hargreaves, 2001). Collaboration among agriculture teachers is about working together to develop lessons, managing the national FFA organization and SAE’s, as well as having learning opportunities (Greiman et al. 2005; Wenger 2000). A positive school culture and high level of support would retain teachers longer (Blackburn & Robinson, 2008).

**Career Satisfaction of Agriculture Teachers**

Work factors such as working conditions, salary, fringe benefits, occupational commitment, and work-life balance influence educators’ career satisfaction to stay in teaching. Brownell et al. (1994, 1995) stated that work place conditions influence teachers’ decision to stay. Poor working conditions is determined as one of the problems faced by agriculture teachers (Boone, 2007, 2009). Furthermore, salary is one of the important motivations for teachers to teach (Crutchfield, 2013). In a survey conducted by Blackburn & Robinson (2008), it was shown that 50% of experienced teachers identified salary as their main reason to keep teaching. Ingersoll & Smith (2003) found the main reasons for teachers to stay or leave teaching is due to working conditions. Teachers who have overwhelming workloads and excessive paperwork will abandon teaching (Brill & Mc Cartney, 2008, Kersaint et al., 2007). Even further, work-life balance will influence teachers’ decisions to remain in the classroom. Crutchfield (2013) researched agricultural educators and found
work engagement was positively associated with their professional life phases. Educators who balance their career and personal lives will have occupational commitment.

Previous studies have established that job satisfaction contributes to teacher retention. Many studies have been carried out on agriculture teachers’ job satisfaction in the United States (Cano & Miller, 1992; Castillo, Conklin, & Cano, 1999; Roca & Washburn, 2006; Blackburn et al., 2008; Kitchel, Smith, Henry, Robinson, Lawver, Park & Schell, 2012; Sorenson & McKim, 2014 & Tippens, Ricketts, Morgan, Navarro, Flanders, 2013). Agriculture teachers reported they were satisfied with their teaching jobs (Kitchel et al., 2012). Findings from Hughes (2012) study shows that teachers have high satisfaction to teach. Factors such as salary, administrative support, and working conditions have a close relation to teachers’ satisfaction in teaching. Tippens et al. (2013) found significant difference between job satisfaction and gender. Blackburn and Robinson (2008) found the positive relationship between job satisfaction and agricultural education level of self-efficacy. Easterly and Myers (2018) found years of teaching experience served as a predictor of career satisfaction.

Agriculture teachers’ decisions to stay in teaching have been influenced by self-efficacy. Darling-Hammond et al. (2002) stated self-efficacy is an important characteristic that develops teachers’ confidence and influences them to stay. Previous work on agriculture teachers’ efficacy found a positive relationship between job satisfaction and their level of self-efficacy (Blackburn et al., 2008). Whittington & Knobloch (2006) investigated efficacy of novice teachers in agricultural education in Ohio, and found that teachers express their positive feelings, which will influence them to make teaching as their long-term career. In another study, there was a low association between self-efficacy and years of teaching experience (Roca & Washburn, 2006).
Together, the literature suggests teacher characteristics, school characteristics, work factors, job satisfaction, and self-efficacy are important factors in determining teachers’ long-term commitment to teaching. Studies about commitment are worthwhile in teaching because the outcome is useful to predict how likely teachers will remain in their career (Mowday, Porter, & Steers, 1982).

**Conceptual Framework**

The conceptual framework in the present study is based on the Chapman model (1983) of teacher retention/attrition, (*Figure 1*). The Chapman model is grounded in social learning theory where individual’s beliefs can be explained from the interaction between personal characteristics, learning behavior, and environmental determinants. According to Krumboltz (1979), social learning theory involves the interaction that can lead to career decision making. The Chapman model explained and expanded social learning theory from Krumboltz and Holland’s career choice theory.

Several studies have used the model to explain predictors that influence teacher retention (Odell & Ferraro, 1992; Ruhland, 2001; Billingsley, 1993; Shen, 1997; Buckley, Schneider, Shang, 2004). The model was widely used to predict teacher retention by several important variables including personal teacher characteristics, educational preparation, initial teaching commitment, quality of first year teaching experience, career satisfaction, social and professional integration into teaching, and external influences (Chapman, 1984). Super (1980) identified career satisfaction as the development of interest and abilities that are required in the occupation and how these are compatible for an individual. Age and gender were two important personal teacher characteristics. Educational preparation is comprised of
the teacher education program and student performance. Initial teaching experience measures teacher-learning experience whereas professional integration measures teachers’ skills, abilities, and achievements. External influences consist of environmental factors such as employment, climate, and opportunities. The model serves as guidance to school administrators and teacher education programs to deal with issues in teacher retention (Ruhland, 2001).

The Chapman model is appropriate and relevant to investigate agriculture teacher retention by using personal characteristic components (e.g., age, gender, teaching experience), teacher-training component (e.g., teachers’ educational achievement), professional and social integration into teaching components (teachers’ involvement in career), and career satisfaction. Career satisfaction of teachers was an important factor that explained a teachers’ decision to leave or remain in the teaching career (Chapman, 1984).

Purpose and Objectives

The purpose of this census study was to evaluate the career satisfaction of high school agriculture teachers and predict their plans to stay in teaching. Objectives of the study were as follows:

1. Describe agriculture teachers’ demographics such as gender, age, years of teaching experience, educational levels, ethnicities, and marital status.
2. Describe the career satisfaction of high school agriculture teachers.
3. Describe the relationship between the overall career satisfaction in teaching and years of teaching experience.
4. Predict teachers’ plans to stay in teaching based on selected teachers’ career satisfaction in teaching and demographic variables.

Methodology

The present research used descriptive survey methods on a target population of high school agriculture teachers ($N = 252$) in Iowa. The accessible population of agriculture teachers was determined in the year 2017. The list of names and contact information was obtained from the Iowa FFA Association.

Instrument

In the present study, a questionnaire that includes four parts was developed using the Qualtrics web-based system. Only Part 3 and Part 4 were used in this manuscript. The survey instrument was adapted from Faith Nyambura Muturia’s (2007) study on teachers’ perceptions and satisfaction toward retention. The 16 Likert-type items in Part 3 asked the
participants to indicate their agreement that the item is a reason that influence their career satisfaction in teaching. The four-point Likert-type scale ranged from 1= strongly disagree, 2= disagree, 3= agree, and 4= strongly agree. Part 4 of the online survey asked the demographic questions.

Validity

A panel of experts helped to determine the instrument’s face, content, and construct validity, and all three panel members agreed the instrument was valid. The instrument was pilot tested on 10 high school agriculture teachers from Iowa. The analysis of the pilot data resulted in a Cronbach’s alpha of .89 for Part 3, representing a high level of internal consistency.

Data Collection

Dillman’s (2009) tailored design method was used in this study. A pre-notification email was sent to 252 agriculture teachers. After three days an email was sent containing a link to the Qualtrics survey. A first reminder was sent to non-respondents after 10 days. A second reminder was sent after a week. A postcard containing the URL link was sent via U.S. Postal Service as a final contact. One week after of the final contact, the online survey was closed. Completed questionnaires were received from 119 of the 252 teachers, which resulted in a 47% response rate.
Data Analysis

Data were gathered from Qualtrics, and the Statistical Packages for Social Science (SPSS) version 23.0 is used to analyze the data. A Cronbach alpha value for reasons for agriculture teachers to stay in teaching was calculated and the reliability coefficient was = .73.

A comparison of early (n=60) to late (n=59) respondents was conducted to determine if the results represented the target population. An independent samples t-test analysis for the two groups of respondents on the career satisfaction variables showed there was no significant difference between two groups. Thus, the comparison of early and late respondents result provides some evidence of representation for the target population (Lindner, Murphy & Briers, 2001).

This was a census study, and therefore the researcher acknowledges some questions could be raised about whether inferential statistics were appropriate. Only 119 agriculture teachers completed the questionnaire, which ended up as a sample from the population of 252 teachers. In agricultural education, it is customary to use inferential statistics in similar situations. It is suggested the readers interpret the findings given this context. From the regression model emphasis coefficients presented and less on the p-value and standard error.

Descriptive statistics (frequency, mean, standard deviation and percentages) were used for the first and second objectives. Pearson correlation coefficients was used for the third objective. Multinomial stepwise logistic regression was used to predict teachers’ plans to stay in teaching from selected variables (e.g., career satisfaction in teaching and demographics).
Findings

Objective one

Describe agriculture teachers’ demographics such as gender, age, years of teaching experience, educational levels, ethnicities, and marital status.

As shown in Table 1, 119 agriculture teachers were responded. There were 63 female and 56 male agriculture teachers. The average age was 38.15 with a standard deviation of 13.12. Sixty-five percent of agriculture teachers were married, and all of them were white.

Table 1 also reports the highest academic attainment for the respondents. The majority ($f=75, 63\%$) of the respondents had bachelor’s degree, and the rest ($f=44, 37\%$) held a master’s degree. Teachers had an average of 14.11 years of teaching experience with a standard deviation of 12.49. A majority ($f=54, 45.4\%$) of the teachers plan to be in teaching for 11 or more years, whereas $35.3\%, (f=42)$ of agriculture teachers plan to teach for one to five years. A smaller number ($f=21, 17.6\%$) of agriculture teachers plan to remain teaching for six to ten years.

Table 1

Demographic Profile of Respondents ($n=119$)

<table>
<thead>
<tr>
<th>Demographics</th>
<th>$M$</th>
<th>$SD$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>38.15</td>
<td>13.12</td>
</tr>
<tr>
<td>Years of teaching experience</td>
<td>14.11</td>
<td>12.49</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>56</td>
<td>47.1</td>
</tr>
<tr>
<td>Female</td>
<td>63</td>
<td>52.9</td>
</tr>
<tr>
<td>Current Marital Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>36</td>
<td>30.3</td>
</tr>
<tr>
<td>Married</td>
<td>78</td>
<td>65.5</td>
</tr>
<tr>
<td>Divorced</td>
<td>4</td>
<td>3.4</td>
</tr>
<tr>
<td>Not answered</td>
<td>1</td>
<td>0.8</td>
</tr>
</tbody>
</table>
Table 1 continued

<table>
<thead>
<tr>
<th>Demographics</th>
<th>( M )</th>
<th>( SD )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>119</td>
<td>100.0</td>
</tr>
<tr>
<td>Highest Academic Attainment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bachelors</td>
<td>75</td>
<td>63.0</td>
</tr>
<tr>
<td>Masters</td>
<td>44</td>
<td>37.0</td>
</tr>
<tr>
<td>Teachers’ Plans to Remain in Teaching</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-5 years</td>
<td>42</td>
<td>35.3</td>
</tr>
<tr>
<td>6-10 years</td>
<td>21</td>
<td>17.6</td>
</tr>
<tr>
<td>11 or more years</td>
<td>54</td>
<td>45.4</td>
</tr>
</tbody>
</table>

Objective two

Describe the career satisfaction of high school agriculture teachers.

High school agriculture teachers responded to 16 items regarding their career satisfaction in teaching. A Likert-type scale with four points ranging from (1) strongly disagree to (4) strongly agree was used. Of the 16 items, four satisfactions in teaching questions were worded negatively and reverse coded. A decision rule was created to help interpret the score values (Table 2).

Table 2

<table>
<thead>
<tr>
<th>Likert-type categories</th>
<th>Mean Score</th>
<th>Interpretation of the score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.00 – 1.5</td>
<td>Strongly Disagree (Negative)</td>
</tr>
<tr>
<td>2</td>
<td>1.51 – 2.5</td>
<td>Disagree (Negative)</td>
</tr>
<tr>
<td>3</td>
<td>2.51 – 3.5</td>
<td>Agree (Positive)</td>
</tr>
<tr>
<td>4</td>
<td>3.51 – 4.0</td>
<td>Strongly Agree (Positive)</td>
</tr>
</tbody>
</table>

Table 3 shows the descriptive statistics for the reasons that influence teachers’ career satisfaction in the teaching profession. The overall mean score for the items was 2.88 with a standard deviation of 0.32. This shows that these items positively influenced teachers’ career
satisfaction in the teaching profession. For the individual item, agriculture teachers provided the highest mean score for “*Teaching agricultural education has provided me with challenges*” ($M = 3.33, SD = .51$). It was followed by “*I have opportunities to attend professional development meetings*” ($M = 3.15, SD = .67$). Teachers provided the lowest mean for “*I feel satisfied with the amount of income I receive*” ($M = 2.46, SD = .77$).

### Table 3

**Reasons that Influence Teachers’ Career Satisfaction in the Teaching Profession**

<table>
<thead>
<tr>
<th>Question</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching agricultural education has provided me with challenges.</td>
<td>3.33</td>
<td>.51</td>
<td>Positive</td>
</tr>
<tr>
<td>I have opportunities to attend professional development meetings.</td>
<td>3.15</td>
<td>.67</td>
<td>Positive</td>
</tr>
<tr>
<td>My job lets me fully use my skills and abilities.</td>
<td>3.12</td>
<td>.59</td>
<td>Positive</td>
</tr>
<tr>
<td>I have a reasonable number of students in my classes.</td>
<td>3.10</td>
<td>.53</td>
<td>Positive</td>
</tr>
<tr>
<td>I look forward to continuing to teach.</td>
<td>3.03</td>
<td>.59</td>
<td>Positive</td>
</tr>
<tr>
<td>I feel satisfied with my job as a teacher.</td>
<td>3.02</td>
<td>.57</td>
<td>Positive</td>
</tr>
<tr>
<td>I feel satisfied with the opportunity to develop my skills and abilities.</td>
<td>2.99</td>
<td>.46</td>
<td>Positive</td>
</tr>
<tr>
<td><em>I feel strained from working with people all day.</em></td>
<td>2.94</td>
<td>.46</td>
<td>Positive</td>
</tr>
<tr>
<td>I have participated in making important decisions at school.</td>
<td>2.80</td>
<td>.74</td>
<td>Positive</td>
</tr>
<tr>
<td>I have clear guidelines regarding my job responsibilities.</td>
<td>2.80</td>
<td>.67</td>
<td>Positive</td>
</tr>
<tr>
<td>I think the duties of the job are reasonable.</td>
<td>2.78</td>
<td>.63</td>
<td>Positive</td>
</tr>
<tr>
<td><em>I feel burned out from my work.</em></td>
<td>2.73</td>
<td>.74</td>
<td>Positive</td>
</tr>
<tr>
<td><em>I feel emotionally drained from my work.</em></td>
<td>2.66</td>
<td>.78</td>
<td>Positive</td>
</tr>
<tr>
<td><em>I feel used up at the end of the workday.</em></td>
<td>2.63</td>
<td>.81</td>
<td>Positive</td>
</tr>
<tr>
<td>Adequate mentoring has been provided to new agriculture science teachers.</td>
<td>2.58</td>
<td>.75</td>
<td>Positive</td>
</tr>
<tr>
<td>I feel satisfied with the amount of income I receive.</td>
<td>2.46</td>
<td>.77</td>
<td>Negative</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2.88</strong></td>
<td><strong>.32</strong></td>
<td>Positive</td>
</tr>
</tbody>
</table>

*Note: Based on scale: 1=Strongly Disagree, 2= Disagree, 3= Agree, 4= Strongly Agree

(*) Item was reverse coded*
Objective three

*Describe the relationship between the overall career satisfaction in teaching and years of teaching experience.*

Table 4 shows the correlation between two variables: overall satisfaction in teaching and years of teaching experience. The overall career satisfaction was the average score for 16 Likert-type items used to measure the satisfaction in teaching construct. These composite variables approximately met the normality and linearity assumptions; therefore, the Pearson product-moment correlations coefficient was calculated. The result shows that the variables were significantly correlated at the 0.01 level of significance. The correlation coefficient was .24, which may be described as low and positive. This indicated that high school agriculture teachers who had high satisfaction in teaching were more likely to have many years of teaching experience. The effect size was small (Cohen, 1998).

Table 4

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall satisfaction in teaching (1)</td>
<td>-</td>
<td>.24*</td>
<td>2.88</td>
<td>0.32</td>
</tr>
<tr>
<td>Years of teaching experience (2)</td>
<td>-</td>
<td>-</td>
<td>14.11</td>
<td>12.49</td>
</tr>
</tbody>
</table>

Notes: **.Correlation is significant at the 0.01 level (2-tailed)
N = 119, df = 118

Objective four

*Predict teachers’ plans to stay in teaching based on selected teachers’ career satisfaction in teaching and demographics variables.*

Multinomial logistic regression was used to predict three different plans to stay in teaching that include 1-5 years, 6-10 years, or 11 or more years. The baseline category for the analysis was 1-5 years plan. Table 5 shows the list of predictor variables that were considered...
and retained after the multinomial logistic regression analysis. Multinomial logistic regression using forward entry stepwise method was used to reduce 15 predictors variables to two significant variables. The correlational matrix for predictor variables showed no issues with multicollinarity.

The model was statistically significant ($\chi^2 = 27.51; p < 0.01$) and Pseudo R (Nagelkerke) = .24 (Table 6). This model indicates that one variable why teachers stay in teaching “I looked forward to continuing teaching” and one demographic characteristic “years of teaching experience” were statistically significant predictors of agriculture teachers’ plans to stay in teaching.

Findings from odds ratio was used to interpret the multinomial logistic regression analysis for teachers’ plans to stay in 6-10 years relative to 1-5 years’ plan. Results indicate that agriculture teachers who have a one unit increase in their scale score with the variable “I looked forward to continuing teaching,” the odds of the teacher being likely to stay for 6-10 years decreases by a factor of 0.84 while other variables in the model are held constant. In addition, for a one-year additional “years of teaching experience”, the odds of the teacher being likely to stay in the 6-10 years of teaching plan decreases by a factor of 0.97 while other variables are held constant (Table 6).

Results from the odds ratio was used to interpret the multinomial logistic regression analysis for teachers’ plans to stay in 11 or more years relative to 1-5 years plan. Results show that agriculture teachers who have a one unit increase in their scale score with the variable “I looked forward to continuing teaching”, the odds of the teacher being likely to stay in 11 or more years increases by a factor 3.71 while other variables are held constant. Further, for a one-year increase of teacher’s years of teaching experience, the odds of a
teacher planning to stay in 11 or more years plan decreases with a factor of 0.93 while other variables held constant.

Using multinomial logistic regression, the model can classify agriculture teachers into three different teachers’ plans to stay in teaching. The classification table indicates how accurately the model predicts the category of three different plans to stay in teaching. Table 7 shows the model correctly classified 58.8% of agriculture teachers. The overall correct classification rate shows a 20.4% improvement over selecting the model category and 38.6% improvement if the dependent variable is held constant. It would be more accurate predicting agriculture teachers’ plans in 11 or more-years category. Almost 80% of agriculture teachers who were observed in 11 or more years plan category also have highly predicted to be in the same category. The false positive rate was 38.6% and 17 cases were misclassified, where this cases observed to be in 1-5 years plan category, but were predicted to be in different categories. The false negative rate was 20.4%. This finding indicated that about 20% of teachers that observed in 11 or more years plan were predicted in 1-5 years plan.

The classification table shows that the model was best at classifying teachers who plan to stay in teaching for 1-5 years (61.4% correctly predicted) and 11 or more years (79.6% correctly predicted) but does poorly at classifying teachers who plan to stay in teaching in 6 – 10 years. This result shows that other predictor variables might better classify teachers who plan to stay in teaching 6 – 10 years (see Table 7).

Results from the final model shows years of teaching experience was an important predictor for teachers’ plans to stay in teaching. Further analysis has been done to cross tabulate teachers’ years of experience with three teachers’ plans’ to stay in teaching (Table 8). Substantial proportions (48.9%) of late career teachers with 16 to 40 years of teaching
experience planned to stay in teaching for a short time, 1-5 years. In addition, a significant percentage (66.7%) of mid-career teachers with 6 to 15 years of teaching experience planned to stay in teaching for 11 or more years. Meanwhile, a considerable amount (46.8%) of early career teachers with 1 to 5 years teaching experience planned to stay for 11 or more years.

Table 5

*Variables Considered and Retained for Predicting Teachers’ Plans to Stay in Teaching*

<table>
<thead>
<tr>
<th>Variables</th>
<th>Variables retained in the final model by stepwise logistic regression.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Demographics</strong></td>
<td></td>
</tr>
<tr>
<td>1. Gender</td>
<td></td>
</tr>
<tr>
<td>2. Age</td>
<td></td>
</tr>
<tr>
<td>3. Years of teaching experience</td>
<td>3. Years of teaching experience</td>
</tr>
<tr>
<td><strong>Reasons that influence teachers’ career satisfaction in teaching</strong></td>
<td></td>
</tr>
<tr>
<td>1. Teaching agricultural education has provided me with challenges.</td>
<td></td>
</tr>
<tr>
<td>2. I have opportunities to attend professional development meetings.</td>
<td></td>
</tr>
<tr>
<td>3. Job lets me fully use my skills and abilities.</td>
<td></td>
</tr>
<tr>
<td>4. I have a reasonable number of students in my classes.</td>
<td></td>
</tr>
<tr>
<td>5. I look forward to continuing to teach.</td>
<td>5. I look forward to continuing to teach.</td>
</tr>
<tr>
<td>6. I feel satisfied with my job as a teacher.</td>
<td></td>
</tr>
<tr>
<td>7. I feel satisfied with the opportunity to develop my skills and abilities.</td>
<td></td>
</tr>
<tr>
<td>8. I have participated in making important decisions at school.</td>
<td></td>
</tr>
<tr>
<td>9. I have clear guidelines regarding my job responsibilities.</td>
<td></td>
</tr>
<tr>
<td>10. I think the duties of the job are reasonable.</td>
<td></td>
</tr>
</tbody>
</table>
Table 5 continued

<table>
<thead>
<tr>
<th>Variables</th>
<th>Variables retained in the final model by stepwise logistic regression.</th>
</tr>
</thead>
<tbody>
<tr>
<td>11. Adequate mentoring has been provided to new agriculture science teachers.</td>
<td></td>
</tr>
<tr>
<td>12. I feel satisfied with the amount of income I receive.</td>
<td></td>
</tr>
</tbody>
</table>

Table 6

*Multinomial Logistic Regression (Model included significant variables at .05 level of significance)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Estimate</th>
<th>SE</th>
<th>Wald</th>
<th>df</th>
<th>p</th>
<th>Odd. Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plans to Continue Teaching</td>
<td>Intercept</td>
<td>2.38</td>
<td>1.36</td>
<td>.030</td>
<td>1</td>
<td>0.86</td>
</tr>
<tr>
<td>6 to 10 years</td>
<td>I looked forward to continuing to teach</td>
<td>-0.16</td>
<td>0.46</td>
<td>0.12</td>
<td>1</td>
<td>0.73</td>
</tr>
<tr>
<td></td>
<td>Years of teaching experience</td>
<td>-0.03</td>
<td>0.21</td>
<td>2.21</td>
<td>1</td>
<td>0.14</td>
</tr>
<tr>
<td>11 or more years</td>
<td>Intercept</td>
<td>-2.80</td>
<td>1.35</td>
<td>4.32</td>
<td>1</td>
<td>0.03</td>
</tr>
<tr>
<td></td>
<td>I looked forward to continuing to teach</td>
<td>1.31</td>
<td>0.44</td>
<td>8.65</td>
<td>1</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>Years of teaching experience</td>
<td>-0.71</td>
<td>0.02</td>
<td>13.16</td>
<td>1</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Note: (n = 119). The reference category is 1-5 years. Model fit ($\chi^2 = 27.51; p < 0.01$)
Table 7

*Classification Model Table*

<table>
<thead>
<tr>
<th>Observed</th>
<th>Predicted</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1-5 years</td>
</tr>
<tr>
<td>1-5 years</td>
<td>27</td>
</tr>
<tr>
<td>6-10 years</td>
<td>11</td>
</tr>
<tr>
<td>11 or more years</td>
<td>11</td>
</tr>
<tr>
<td>Overall Percentage</td>
<td>41.2%</td>
</tr>
</tbody>
</table>

Table 8

*Teachers’ Plans to Stay in Teaching by their Years of Teaching Experience Categories (minimum year = 1, maximum year = 40)*

<table>
<thead>
<tr>
<th>Teaching Experience Category</th>
<th>1 to 5 years</th>
<th>6 to 10 years</th>
<th>11 or more years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early-Career ^a</td>
<td>34.0%</td>
<td>19.1%</td>
<td>46.8%</td>
</tr>
<tr>
<td>Mid-Career ^b</td>
<td>22.2%</td>
<td>11.1%</td>
<td>66.7%</td>
</tr>
<tr>
<td>Late-Career ^c</td>
<td>48.9%</td>
<td>20.0%</td>
<td>31.1%</td>
</tr>
</tbody>
</table>

^a 1-5 years of teaching experience
^b 6-15 years of teaching experience
^c 16-40 years of teaching experience

**Conclusions, Implications & Recommendations**

The demographic variables were used to provide a description of the population of agriculture teachers in Iowa. Results that arose from this study regarding the teachers who currently remain in teaching suggested that the typical teacher was a white female. This data supported the trend of a substantial increase in the number of female agriculture teachers in the United States (Castillo & Cano, 1999). A predominance of white teachers is likely a reflection of the general population in Iowa.
The findings implied that on average agriculture teachers have more than 10 years of teaching experience. In addition, many of the teachers \((n = 54)\) in this study plan to remain in teaching for 11 or more years. The research finding agree with Hughes (2012) who studied teacher retention and found 83.5% of teachers plan to stay in teaching until they retire. Furthermore, the present data could give a projected number of agriculture teachers that will continue to be teaching in Iowa after another 10 or more years.

Objective two sought to describe the career satisfaction of high school agriculture teachers. Iowa agriculture teachers remain in teaching because it is challenging. This finding supported previous studies that mentioned agriculture teachers have various teaching responsibilities including teaching subject matter, designing a lesson and instruction, reviewing the curriculum, communicating with parents, conducting community work, conducting supervised agricultural experience (SAE) programs and the National FFA Organization (Delnero and Montgomery; 2001 & Phipps & Osborne; 1998). The results indicate that agriculture teachers feel teaching agricultural education is challenging, yet it provides them job satisfaction that makes them remain in teaching.

In addition, the current study found that teachers view the opportunities for professional development as important reason that influenced teacher satisfaction in teaching. This finding confirms the previous studies that professional development is a need for agriculture teachers and is associated with teacher retention (Smalley & Smith, 2017; Steffy & Wolfe, 2001). This result may be explained by the fact that agriculture teachers want to have networking, reenergizing, and stress management as a part of their professional development opportunities to engage with their careers (Smalley & Smith, 2017).
It is recommended that the professional development program should be ongoing, to teachers’ wishes, and fulfill teachers’ specific needs.

There was a significantly positive relationship between overall career satisfaction in teaching and years of teaching experience. This finding is consistent with studies that found teaching experience has a positive relationship with job satisfaction (Grady 1985 & Castillo and Cano; 1999). The current finding was somewhat in contrast of earlier findings by Cano & Miller (1992) and Gillman (2012) who found no significant relationship between overall job satisfaction and agriculture teachers’ years of teaching experience in Ohio and Georgia respectively. Therefore, the current result provided a possible explanation of inconsistency regarding agriculture teachers’ job satisfaction with years of teaching experience in different states. Clark, Kelsey & Brown (2014) found experienced mid-career teachers view teaching as a sustainable career. The perception of sustainability as teachers will cause them to be more satisfied when teaching and they will remain them longer. Given the current findings, further research should be conducted, and more attention should be given to years of teaching experience as to how it associates with agriculture teachers’ satisfaction in teaching.

The last objective sought to predict the significant variables that contributed to teachers’ plans to stay in teaching. Looking forward to continuing to teach and years of teaching experience best explained agriculture teachers’ plans to remain in teaching. These findings are consistent with previous studies that found years of teaching experience as a significant personal characteristic associated with teacher retention (Gillman 2012, Warnick 2010 et al.). Further analysis from the findings found that a substantial number of late career teachers who have 16 to 40 years of teaching experience planned to stay in teaching for one to five years. One possible explanation for this is that teachers have been teaching long
enough to reach their retirement. Meanwhile, mid-career teachers, which refer to teachers who have 6 to 15 years of teaching experience, were more likely to stay long enough to reach their retirement. Another possible explanation for this is that mid-career teachers feel competent and confident to teach which influences their decisions to remain in teaching.

Given this finding, years of teaching experience can serve as a significant predictor for high school agriculture teachers’ retention in Iowa. Information gleaned from this finding could help school administrators and educational policy makers in planning a better recruitment and retention strategies.

Agriculture teachers indicated that they were looking forward to continuing teaching as a significant predictor for agriculture teacher retention in Iowa. This finding was consistent with other research, which indicated teachers continue to teach when they feel education is enjoyable and exciting to accomplish their professional goals (Nieto, 2003). As such, agriculture teachers in this study felt courageous to keep teaching, yet they also realized the adventure and challenges of teaching. Perhaps agriculture teachers love the teaching career and want to apply their knowledge, skills and technology to the classroom.

Based on present study, the findings support the Chapman Model (1984) where teaching experience was a significant predictor for teacher retention. This study also supported Grissmer & Kirby’s theory (1991) that found years of teaching experience as a better predictor of teacher retention compared to age. One implication for future practice is to improve teachers’ working environments to help them enjoy their educational adventures more. Overall, agriculture teachers’ satisfaction likely increases based on years of teaching experience. Thus, those who are responsible for hiring agriculture teachers should look for teachers who have more experience in teaching and prioritize them.
In agricultural education, research related to career satisfaction for high school agriculture teachers is important, as it is believed to help predict teacher retention and commitment in teaching. Commitment in teaching cannot exist in isolation and, therefore, it is necessary to address any factors or reasons that contribute to teacher retention. Commitment in teaching is associated with leadership support, teaching experience, career satisfaction and job stress (Billingsley, 2004).

**Recommendations for practical / future research**

1. Longitudinal studies focused on career satisfaction of agriculture teachers should be conducted. These studies should be conducted at regular intervals to establish trends.

2. This study should be replicated to determine if the findings are more broadly generalizable.

3. It is recommended that the NAAE professional development programs cater to agriculture teachers’ needs from three different categories: early-career, mid-career, and late-career teachers continue. The professional development programs should focus on increasing teacher satisfaction in teaching in an attempt to provide teachers with new knowledge and fulfill their specific needs.

4. School administrators should continue to provide their support to agriculture teachers physically and emotionally to make them feel happier in teaching. School administrators should also encourage creating positive school environments and a culture that would open up more space for teachers to express their thoughts, and include them in the decision-making process.
References


CHAPTER VI

GENERAL CONCLUSIONS & RECOMMENDATIONS

The dissertation features three articles that describe high school agriculture teachers’ motivations to teach, personal and professional needs to continue teaching, and career satisfaction in the teaching profession. This chapter will discuss the general conclusions and will provide several recommendations for practices and future research.

The first paper (Chapter 3) was designed to describe the factors that motivate high school agriculture teachers to teach. Results from maximum likelihood factor analysis using oblique/oblimin rotation found that intrinsic and extrinsic factors underlie high school agriculture teachers’ motivation to teach. The findings supported intrinsic and extrinsic components in Self-Determination Theory (SDT). This may suggest that these types of motivations influenced teachers to teach. Descriptive statistics for the two factors (i.e., intrinsic and extrinsic) found that teachers were motivated to teach because of their chance to be a role model, enjoyment of teaching, job benefits from teaching, and pleasant working environment. Taken together, these results suggest that teachers feel happy about their jobs, satisfied with their working conditions, and want to shape and become role models for younger generations. This positive attitude toward teaching might retain teachers longer.

The purpose of the second paper (Chapter 4) was to investigate the personal and professional needs that influence high school agriculture teachers’ intentions to continue teaching. Results from descriptive statistics show many of agriculture teachers plan to continue teaching for more than 11 years. They agreed the most influential needs for them to continue teaching was their ability to affect student performance. Further, teachers recognize the importance of knowledge and skills in teaching, but these two components were not
significantly correlated with teachers’ plans to continue teaching. Thus, the findings support the present conceptual framework, but did not clearly contribute to the subjective task value concepts in the Expectancy Value Theory. Finally, the multinominal stepwise logistic regression model can be useful to predict teachers’ plans to stay in teaching from teachers’ personal and professional needs that influence their intentions to teach. Teacher who felt good about themselves and identified as being in the right career were likely to stay for more than 11 years. Results suggested that teachers who have higher self-esteem in teaching and think teaching is the right career for them would stay longer in teaching.

The final paper (Chapter 5) evaluated the career satisfaction of high school agriculture teachers. Descriptive findings from the study show that many agriculture teachers (n=54) planned to remain in teaching careers for 11 or more years. Overall, agriculture teachers agreed that a number of reasons positively influenced their career satisfaction in the teaching profession. Teachers agreed that their career satisfaction is influenced by the challenge of teaching agricultural education and professional development opportunities. The study also found a significant positive relationship between the overall career satisfaction in teaching and years of teaching experience. Looking forward to continuing teaching and years of teaching experience were two significant predictors for teachers’ plans to stay in teaching. Teachers with (16-40 years) of teaching experience planned to stay in teaching for a short time. The findings support the years of teaching experience component in Chapman Model (1983) and Grissmer & Kirby’s Theory (1991). The study contributes to our understanding of the career satisfaction of high school agriculture teachers in Iowa, which can help to develop effective retention strategies.
Based on the present study, the conceptual framework of teacher retention presented in the Chapter Two was revised. Figure 1 illustrates the revised model for high school agriculture teacher retention. The revised model includes intrinsic motivation, extrinsic motivation, and Self-Determination Theory as the *Factors that Motivate Teachers to Teach*. Altruistic motivation was not retained in the model. The revised model also includes personal and professional needs, knowledge and skills in teaching, teachers’ plans to remain, and conceptual research framework as the *Factors that Influence Teachers’ Intentions to Continue Teaching*. Self-efficacy and Expectancy-Value Theory were not retained in the model.

Satisfaction in teaching, teacher characteristics (i.e., years of teaching experience), school characteristics (i.e., job satisfaction and opportunities in making decisions), working conditions and family, professional development, Chapman Model, and Grissmer & Kirby Theory of Attrition were included in the revised model as the *Reasons for Teachers to Stay in Teaching*. Primary Causes of Teacher Attrition in Agricultural Education Conceptual Model was not retained in the revised model.

The revised conceptual framework (Figure 1) can be useful for teacher retention studies. This parsimonious model framework was used to keep the variables down to essentials. The revised conceptual model provides only important variables for high school agriculture teacher retention in Iowa.
Figure 1: Revised conceptual framework for high school agriculture teacher retention

**Recommendations for practices**

**School Administrator**

School administrators should listen to agriculture teacher’s needs. Results from the first paper show intrinsic and extrinsic motivation were important motivational factors for agriculture teachers to teach. Therefore, school administrators should pay close attention to these motivations and consistently increase teachers’ motivations to teach through recognition, appreciation, encouragement and feedback.

School administrators should create conducive working environments for teachers to boost extrinsic motivation. They should prepare conducive facilities for teachers to teach, and
create work-life balance for teachers. School administrators should clearly identify teachers’ roles based on their strengths, abilities, and job responsibilities.

In addition, school administrators should work on early-career agriculture teachers’ socialization. This study found that the majority of agriculture teachers (86.6%) had negative early teaching experiences. School administrator can help to promote socialization practices by providing opportunities for new teachers to learn from experienced teachers. School administrators should involve agriculture teachers in decision-making. As a result, teachers will feel more appreciated, and have more to offer the school.

Educators / Educational policies / Local Board of Education Iowa

The Leadership for Retention [XLR8] program and National Teach Ag Campaign should be continued and improved by looking at the aspects of teachers’ motivations to teach, personal and professional needs to continue teaching, and career satisfaction in the teaching. It is also recommended that, NAAE continue Curriculum for Agriculture Science Education (CASE) institutes to provide professional development opportunities. Professional development program opportunities should be continuously given to agriculture teachers to update their knowledge and skills in teaching.

The information provided from these findings will be useful to teacher education programs and pre-service teachers. It is recommended that educators in the university be attentive to pre-service teachers’ intrinsic and extrinsic motivations and explain the realities of the teaching profession by giving them examples of job situations. This will help them to understand the realities of teaching and have positive expectations to enter the teaching profession.
The present study did not address compensation and job benefits in relation with teachers’ career satisfaction in teaching. However, from the literature, it is recommended to provide teachers with better compensation and job benefits. For example, offering a bonus program, special health plans, and competitive salaries will give significant meaning to teachers and influence their perception about staying in the profession longer.

**Recommendations for future research**

Based on the present study findings, questions raised for future research may include:

1. Can the findings of this study be replicated in other states?

2. What impact does the Leadership for Retention [XLR8] program have on early-career, mid-career, and late-career teachers’ professional development needs?

3. What other research studies can be utilized to further understand reasons for high school agriculture teachers’ retention?

4. Are there other predictors that have not been identified in the present research, but should be included in this study to predict teachers’ plans to continue teaching?
APPENDIX A

HUMAN SUBJECTS RESEARCH APPROVAL FORM

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Date: 2/20/2017
To: Norma Ismail
223A Curfiss

From: Office for Responsible Research

Title: High School Agriculture Teachers Motivation to Teach, Intention to Continue Teaching, and Reasons to Stay in the Teaching Profession

IRB ID: 17-354

Study Review Date: 2/20/2017

The project referenced above has been declared exempt from the requirements of the human subject protections regulations as described in 45 CFR 46.101(b) because it meets the following federal requirements for exemption:

- (2) Research involving the use of educational testing (cognitive, diagnostic, aptitude, achievement), survey or interview procedures with adults or observation of public behavior where
  - Information obtained is recorded in such a manner that human subjects cannot be identified directly or through identifiers linked to the subjects; or
  - Any disclosure of the human subjects' responses outside the research could not reasonably place the subject at risk of criminal or civil liability or be damaging to their financial standing, employability, or reputation.

The determination of exemption means that:

- You do not need to submit an application for annual continuing review.

- You must carry out the research as described in the IRB application. Review by IRB staff is required prior to implementing modifications that may change the exempt status of the research. In general, review is required for any modifications to the research procedures (e.g., method of data collection, nature or scope of information to be collected, changes in confidentiality measures, etc.), modifications that result in the inclusion of participants from vulnerable populations, and/or any change that may increase the risk or discomfort to participants. Changes to key personnel must also be approved. The purpose of review is to determine if the project still meets the federal criteria for exemption.

Exempt research is subject to many regulatory requirements that must be addressed prior to implementation of the study. Conducting non-exempt research without IRB review and approval may constitute non-compliance with federal regulations and/or academic misconduct according to ISU policy.

Detailed information about requirements for submission of modifications can be found on the Exempt Study Modification Form. A Personnel Change Form may be submitted when the only modification involves changes in study staff. If it is determined that exemption is no longer warranted, then an Application for Approval of Research Involving Humans Form will need to be submitted and approved before proceeding with data collection.

Please note that you must submit all research involving human participants for review. Only the IRB or designee may make the determination of exemption, even if you conduct a study in the future that is exactly like this study.

Please be aware that approval from other entities may also be needed. For example, access to data from private records (e.g., student, medical, or employment records, etc.) that are protected by FERPA, HIPAA, or other confidentiality policies requires permission from the holders of those records. Similarly, for research conducted in institutions other than ISU (e.g., schools, other colleges or universities, medical facilities, companies, etc.), investigators must obtain permission from the institution(s) as required by their policies. An IRB determination of exemption in no way implies or guarantees that permission from these other entities will be granted.
APPENDIX B

INSTRUMENT PERMISSION, SURVEY INSTRUMENT, CORRESPONDENTS

CONTACTS

Joshua Rice <jerice@umn.edu>

Hello Norma,

Feel free to utilize my instrument for your research. If there is any other way that I can be of assistance please let me know.

Joshua E. Rice, Ph.D.
Assistant Extension Professor, Science of Agriculture Specialist
University of Minnesota, Extension Center for Youth Development
office: 612-624-6415 cell: 612-702-6121 email: jerice@umn.edu

Larry Daniel <larry@chabiscu.edu>

Dear Norma,

Thank you for your interest in my research. You certainly have my permission to use the OTS instrument—simply give reference to my previous study documenting development of the instrumentations. Please send me a copy of your results once you have completed the study. You may send me a web link to your dissertation document or a shorter summary of your findings.

Best of wishes as you pursue your research,

Regards,

Larry Daniel

From: Norma Ismail [mailto:nimal@unima.edu]
Sent: Monday, June 03, 2013 5:22 PM
To: Larry Daniel
Subject: Permission to use survey instrument
Hi Normala,

You have our permission to use the Intentions Measure. Appendix A has the full instrument.

Good luck with your research!

Lisa Looney, Ph.D.
Associate Professor & Program Chair, Child Development Masters Program
Department of Advanced Studies in Education & Human Development
College of Education and Organizational Leadership
lllooney@laverne.edu
Meet Me: https://laverne.webex.com/meet/llooneylaverne.edu
909-448-4630

"The way we talk to our children becomes their inner voice." -- Peggy O'Mara

Hi Normala,

I am glad that you are interested in using my questionnaire in your dissertation research. You have my permission to proceed with using it in your study.

Best wishes in your research!

Faith

Sent from my iPad
Panel of Expert Guidelines for the High School Agriculture Teacher’s Motivation to Teach, Intention to Continue Teaching, and Reasons to Stay in the Teaching Profession Questionnaire

The aims of this study are to:

1. Determine the factors that motivate high school agriculture teachers to teach.
2. Describe the intentions of high school agriculture teachers to continue teaching.
3. Evaluate reasons why high school agriculture teachers remain in teaching profession.

1. Please consider whether each item is:
   <relevant to the objectives
   <clear and concise
   <not “multi-barreled”
   <free of technical jargon

2. Please review each of the items in the questionnaire. Indicate if each item should be:
   1. Retained as is (Requires no mark)
   2. Modified and retained (Make edits / comments on the questionnaire)
   3. Deleted (Marked through)

3. Then, please circle one of the following responses.
   A. The questionnaire is content and face valid
   B. The questionnaire will be content and face valid after making the changes I have recommend.
   C. The questionnaire is not content valid for the following reason:
I am also interested in knowing if three scales contained in the questionnaire are construct valid.

**Motivation to Teach**

Motivation to teach includes intrinsic, extrinsic and altruistic.

**Intrinsic motivation**

Intrinsic motivation can be defined as incentive which originates within the behavior itself rather than externally, as in playing a musical instrument for enjoyment, (Dictionary of Behavioral Science, 1989).

*In your opinion do the items located at pages 2-3, part A, numbered 1-26, measure intrinsic motivation to teach?*

Yes

No (Please Explain)

___________________________________________________________________________

___________________________________________________________________________

___________________________________________________________________________

___________________________________________________________________________

___________________________________________________________________________

___________________________________________________________________________

Extrinsic motivation

Extrinsic motivation is motivation which stems from positive or negative reinforcements which are external to the behavior itself rather than inherent in it, (Dictionary of Behavioral Science, 1989).

*In your opinion do the items located at pages 3-4, part A, numbered 27-52 measure extrinsic motivation to teach?*

Yes
Altruistic motivation
In social psychology, altruistic motivation involves behavior that must benefit another person, must be performed voluntarily and intentionally, the benefit must be goal by itself, and must be performed without expecting any external reward, (Bar–Tal, 1976; Berkowitz, 1972; Krebs, 1970; Leeds, 1963; Staub, 1978).

In your opinion do the items located at page 4, part A, numbered 53-64 measure altruistic motivation to teach?
Yes
No (Please Explain)
Yes
No (Please explain)

___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________

High School Agriculture Teachers’ Reasons to Stay in Teaching
In your opinion do the items located at pages 6-7, part C, numbered 1-24 measure high
school agriculture teachers’ reasons for staying in the teaching profession?

Yes
No (Please explain)

___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________

___________
Cover Letter - Invitation to Serve as Participants for a Research

Greetings [First Name],

We are writing you about a very important study that will determine the factors that motivate high school agriculture teachers to teach, assess their intention to continue teaching, and determine their reasons for staying in teaching.

You were selected to participate because you are a high school agriculture teacher in Iowa. Your response is very important because it might eventually help schools in Iowa with their teacher retention efforts.

Your participation is voluntary, and you may withdraw your participation at any time without any consequences. All responses will be kept secure and confidential. There are no foreseeable risks from participating in this study. You should be able to complete the questionnaire in approximately 15 minutes.

If you have questions about this study, do not hesitate to contact us, Normala Ismail (515-708-6515), nismail@iastate.edu or Greg Miller (515-294-2583), gsmiller@iastate.edu.

Thank you very much for your participation.

Sincerely,

Normala Ismail
Graduate Student
Iowa State University

Greg Miller
Professor
Iowa State University
First Contact- Pre-notice

Dear [First Name],

In a few days, you will receive an e-mail requesting that you fill out a brief online questionnaire for an important research project being conducted at Iowa State University.

The purpose of this study is to determine the factors that motivate high school agriculture teachers to teach, assess their intentions to continue teaching and determine their reasons for staying in teaching. Data from this study would help retention efforts for high school agriculture teachers in Iowa.

We are sending this e-mail in advance because we know that many people like to know ahead of time that they will be asked to participate in a survey. Thank you for your time and consideration. It is only with the generous help of people like you that our research can be successful.

If you have questions about this study, do not hesitate to contact us, Normala Ismail (515-708-6515), nismail@iastate.edu or Greg Miller (515-294-2583), gsmiller@iastate.edu.

Sincerely,

Normala Ismail
Graduate Student
Iowa State University

Greg Miller
Professor
Iowa State University
First Reminder Invitation to Serve as Participants for the Research

Dear [First Name]
A few days ago, we sent you a letter requesting your participation in a survey to determine the factors that motivate high school agriculture teachers to teach, assess their intention to continue teaching, and determine their reasons for staying in teaching.

If you have already completed the questionnaire, please accept our sincere thanks. If not please do so today. We are especially grateful for your help because it is only by asking people like you that we can help retention efforts of high school agriculture teachers in Iowa.

If you have questions about this study, do not hesitate to contact us, Normala Ismail (515)-708-6515, nismail@iastate.edu or Greg Miller (515)-294-2583, gsmiller@iastate.edu.

Thank you very much for your participation.

Sincerely,
Normala Ismail
Graduate Student
Iowa State University

Greg Miller
Professor
Iowa State University
Follow-Up Contact – Second Reminder Invitation to Serve as Participants for the Research

Dear [First Name]

Several days ago, we sent you an email with a link to an important questionnaire. The questionnaire aims to determine the factors that motivate high school agriculture teachers to teach, assess their intention to continue teaching, and determine their reasons for staying in teaching.

If you have already completed the questionnaire, please accept our sincere thanks. If not please do so today. We hope that you will complete the questionnaire today. We are grateful for your help because you are a high school agriculture teacher, and your responses are very important to this research.

If you have questions about this study, do not hesitate to contact us, Normala Ismail (515)-708-6515, nismail@iastate.edu or Greg Miller (515)-294-2583, gsmiller@iastate.edu.

Sincerely,

Normala Ismail
Graduate Student
Iowa State University

Greg Miller
Professor
Iowa State University
Final Follow-Up Contact – Mail Postcard

Dear [First Name],

We are writing you about a very important study that will determine the factors that motivate high school agriculture teachers to teach, assess their intention to continue teaching, and determine their reasons for staying in teaching.

You were selected to participate because you are a high school agriculture teacher in Iowa. Your response is very important because it might eventually help schools in Iowa with their teacher retention efforts.

Your participation is voluntary, and you may withdraw your participation at any time without any consequences. All responses will be kept secure and confidential. There are no foreseeable risks from participating in this study. You should be able to complete the questionnaire in approximately 15 minutes.

We originally sent information about this study by e-mail, but have not received your response. Our-emails may not have reached by you, so we decided to send this invitation via US mail.

We hope that you will complete the questionnaire today. To access the questionnaire, enter the following URL into your browser.

https://iastate.qualtrics.com/jfe/form/SVetYkEmQuEZFnxQN

For further information about the study, contact Normala Ismail (515)-708-6515, nismail@iastate.edu or Greg Miller (515)-294-2583, gsmiller@iastate.edu.

Thank you for participating.

Sincerely,

Normala Ismail
Graduate Student
Iowa State University

Greg Miller
Professor
Iowa State University
Formal Study High School Ag Teacher

Q3 Thank you for participating in this study. This questionnaire consists of four parts. Please respond to all the questions. Your answers will be kept confidential.

Part 1: High School Agriculture Teachers Motivation to Teach

Instructions: The items below ask you to consider the factors that motivate you to teach. For each item in this part, indicate whether you; Strongly Disagree, Disagree, Agree or Strongly Agree.

Intrinsic Motivations
I decided to teach because…
<table>
<thead>
<tr>
<th>Strongly Disagree (1)</th>
<th>Disagree (2)</th>
<th>Agree (3)</th>
<th>Strongly Agree (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I feel a personal “calling” to teach. (1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>teaching fits well with my personality. (3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>teaching is a challenging occupation. (4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I love children. (5)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have affection for the subject matter. (6)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>it is an intellectually stimulating occupation. (7)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I enjoy working with children. (8)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I felt teaching would be enjoyable. (9)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>teaching is a creative profession. (10)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>teaching allows me the opportunity to show respect for children. (11)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>teaching gives me an opportunity to promote respect for knowledge. (12)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>teaching gives me an opportunity to promote respect for learning. (13)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>teaching offers me an opportunity for career advancement. (14)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Statement</td>
<td>Option</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------------------------------------------------</td>
<td>--------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>teaching can help me develop character. (15)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>teaching gives me opportunities for leadership. (16)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>teaching gives me a lifelong opportunity to learn. (17)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>teaching gives me an opportunity to interact with interesting colleagues. (18)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>teaching was the job for which I felt best suited. (19)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Part 1: High School Agriculture Teachers Motivation to Teach - Continued

Instructions: The items below ask you to consider the factors that motivate you to teach. For each item in this part, indicate whether you; Strongly Disagree, Disagree, Agree or Strongly Agree.

**Extrinsic Motivations**

I decided to teach because...
<table>
<thead>
<tr>
<th>Strongly Disagree (1)</th>
<th>Disagree (2)</th>
<th>Agree (3)</th>
<th>Strongly Agree (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I enjoy being around the school environment. (1)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I will have a chance to make a good salary. (2)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>teachers have nice benefits associated with their jobs. (3)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I like the work hours. (4)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I like the vacation time. (5)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>my parents feel that teaching would be a good career for me. (6)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>teaching is a prestigious occupation. (7)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>the time schedule will be compatible with my home situation. (8)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>teaching gives me a chance to improve my social standing. (9)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>teaching is a tradition in my family. (10)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>people often regard me as a natural teacher. (11)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>teachers have a pleasant working environment. (12)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>teaching is an easy job to train for. (13)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I heard a motivating speech about teaching. (14)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
Part 1: High School Agriculture Teachers Motivation to Teach - Continued

Instructions: The items below ask you to consider the factors that motivate you to teach. For each item in this part, indicate whether you; Strongly Disagree, Disagree, Agree or Strongly Agree.

**Altruistic motivations**

I decided to teach because…

<table>
<thead>
<tr>
<th>I was influenced by media material focused on the benefits of teaching. (15)</th>
<th></th>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>I have highly motivated students within the agricultural education program. (16)</td>
<td></td>
<td></td>
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<tr>
<td>I have good classroom conditions. (17)</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have good laboratory conditions. (18)</td>
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<tr>
<td>the facilities provide for student success and achievement. (19)</td>
<td></td>
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<tr>
<td>the students in agricultural education courses have flexibility in their schedules. (20)</td>
<td></td>
<td></td>
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<tr>
<td>teaching offers job security. (21)</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Disagree (1)</td>
<td>Disagree (2)</td>
<td>Agree (3)</td>
<td>Strongly Agree (4)</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>I wanted to work with young people. (1)</td>
<td></td>
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<tr>
<td>teaching allows me to perform a valuable service of moral worth. (2)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>teaching gives me a chance to help the less fortunate. (3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>teaching gives me an opportunity to help students gain a sense of achievement. (4)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>teaching gives me an opportunity to help students gain a sense of self-worth. (5)</td>
<td></td>
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</tr>
<tr>
<td>teaching gives me a chance to “pay back” the good teachers I have had. (6)</td>
<td></td>
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</tr>
<tr>
<td>I would like to solve some of the problems in the educational system. (7)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>I have a desire to impart knowledge to other people. (8)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>teaching gives me a chance to make an impact on society. (9)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>teaching gives me a chance to serve as a positive role model for children. (10)</td>
<td></td>
<td></td>
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<tr>
<td>I have opportunity to prepare students for future careers in agricultural education. (11)</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
### Part 2: High School Agriculture Teachers’ Intentions to Continue Teaching

Instructions: The items below ask about the extent that the following **personal and professional needs** influenced your intention to continue teaching. These are possible needs to remain in the teaching profession. For each item in this part, indicate whether you: Strongly Disagree, Disagree, Agree or Strongly Agree.

<table>
<thead>
<tr>
<th>Strongly Disagree (1)</th>
<th>Disagree (2)</th>
<th>Agree (3)</th>
<th>Strongly Agree (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staying in teaching is a part of what will make me feel good about myself in the future. (1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I will end up getting a promotion if I stay in teaching. (2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teaching fulfills my needs. (3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I choose to stay in teaching because it is important to me to be recognized as a teacher. (4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I want to stay because teaching is the right career for me. (5)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My family expects me to stay in teaching. (6)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teaching will help me fulfill future personal objectives. (8)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I want to stay because I believe that I have the ability to positively affect student performance. (9)</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
Part 2: High School Agriculture Teachers’ Intention to Continue Teaching - Continued

The items below relate to your perspective on knowledge and skills in teaching, and your aspiration relative to school management.

11. Which is more important? (Choose one)

- Knowledge of the subject (1)
- Skills in teaching (2)
- Both are equally important (3)

Q10 12. In your first years of teaching, did you have negative experiences? (Choose one)

- Yes (1)
- No (2)

Q11 13. Do you have aspirations of moving into administration? (Choose one)

- Yes (1)
- No (2)

Display This Question:
If 13. Do you have aspirations of moving into administration? (Choose one) = Yes

Q12 14. If you answered yes to Question 13, in what time frame would you like to accomplish a move into administration? (Choose one)

- 1-3 Years (1)
- 4-6 Years (2)
- 7-9 Years (3)
- 10 or more years (4)
# Part 3: High School Agriculture Teachers Retention

Instructions: The following items focus on reasons that influence teachers’ career satisfaction in the teaching career. For each item in this part, indicate the extent to which you agree that this item is a reason that influence your career satisfaction in teaching. For each item in this part, indicate whether you: Strongly Disagree, Disagree, Agree or Strongly Agree.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree (1)</th>
<th>Disagree (2)</th>
<th>Agree (3)</th>
<th>Strongly Agree (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching agricultural education has provided me with challenges. (1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I think the duties of the job are reasonable. (2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have participated in making important decisions at school. (3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have a reasonable number of students in my classes. (4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have opportunities to attend professional development meetings. (5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have clear guidelines regarding my job responsibilities. (6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My job lets me fully use my skills and abilities. (7)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adequate mentoring has been provided to new agriculture science teachers. (8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Q14 Part 3: High School Agriculture Teachers Retention - Continued

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree (1)</th>
<th>Disagree (2)</th>
<th>Agree (3)</th>
<th>Strongly Agree (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I feel emotionally drained from my work. (1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel satisfied with my job as a teacher. (2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel used up at the end of the workday. (3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I look forward to continuing to teach. (4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel strained from working with people all day. (5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel satisfied with the opportunity to develop my skills and abilities. (6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel satisfied with the amount of income I receive. (7)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel burned out from my work. (8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Part 3: Additional Questions Yes or No – Motivations to Teach

Instructions: Please indicate yes or no whether each of the factors listed below influenced you in deciding to teach agricultural education.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Yes (1)</th>
<th>No (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal reasons. (1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pay. (2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Desire to teach. (3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to teach. (5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family influence. (6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Encouragement from others. (7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job security. (8)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q16 Please lists any other factors that influence you to teach?

________________________________________________________________

Q17 **Part 4= Demographic Information**

1. Gender (Choose one)
   - Male (1)
   - Female (2)

Q18 2. Age

________________________________________________________________
Q19 4. Current marital status

- Single (1)
- Married (2)
- Divorced (3)
- Separated (4)
- Widowed (5)

Q20 3. Your ethnicity (Choose one)

- White (8)
- Native American (9)
- African American (10)
- Hispanic/Latino (11)
- Asian (12)
- Other (Please Specify) (13)

Q21 5. What is your highest academic attainment? (Degree you obtained)

- Bachelors (1)
- Masters (2)
- Doctorate (3)
- Other (Please Specify) (4)

Q22 6. How many years have you been teaching? Number of years

Q23 7. How many years have you taught agricultural education? Number of years

☐ Yes (1)

☐ No (2)

Q25 9. What courses do you teach using CASE Curriculum? (Please select all applicable)

☐ Introduction to Agriculture, Food, and Natural Resources (1)

☐ Principles of Agricultural Science Animal (2)

☐ Animal and Plant Biotechnology (3)

☐ Food Science and Safety (4)

☐ Principles of Agricultural Science Plant (5)

☐ Agricultural Power and Technology (6)

☐ Mechanical System in Agriculture (7)

☐ Natural Resources and Ecology (8)

☐ Environmental Science Issues (9)

☐ Agricultural Business and Foundations (10)

☐ Agricultural Marketing and Communications (11)

☐ Agricultural Research and Development (12)
Q26 10. How long do you plan to continue teaching?

- 1-5 years (1)
- 6-10 years (2)
- 11 or more years (3)
APPENDIX C

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