The purpose of this study was to discover the routes to certification and turnover intentions of Wisconsin agriculture teachers with fewer than three years of experience teaching agriculture. The study also evaluated the relationship between the routes to certification and turnover intentions. A census of all Wisconsin agriculture teachers with fewer than three years of experience was attempted to gain a deeper understanding of certification routes within the population.

Findings showed approximately a third of the respondents \((n = 35)\) entered the agriculture classroom in the past three years with an alternative certification. The reasons for doing so included location of the teacher preparation program, finances, ability to work full-time, and not wanting to teach as an undergraduate student. Traditionally certified respondents noted they wanted to teach as an undergraduate student. Overall, the respondents had moderately low turnover intentions \((M = 2.95, SD = 1.13)\). There was not a statistically significant difference between the routes to certification and turnover intentions of Wisconsin agriculture teachers with fewer than three years of experience teaching agriculture.

The results in this study provide implications for further research in alternative certification. Additional research should be completed to understand reasons for alternatively certified teachers are entering the classroom and more detailed information on content and pedagogical training.
Routes to Certification and Turnover Intentions of Early Career Wisconsin Agriculture Teachers

by

Kellie Claflin

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Master of Science thesis of Kellie Claflin presented on May 31, 2017

APPROVED:

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Head of the Department of Agricultural Education and Agricultural Sciences

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Dean of the Graduate School

I understand that my thesis will become part of the permanent collection of Oregon State University libraries. My signature below authorizes release of my thesis to any reader upon request.

___________________________
Kellie Claflin, Author
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Chapter 1 Introduction

Chapter 1 outlines the need for teachers, specifically secondary agriculture teachers, and provides background on teacher preparation programs. An overview of alternative certification (AC) in agricultural education is given, in addition to turnover intentions of educators. The purpose of the study is given, as well as the conceptual framework. The significance of this research, definition of terms, and assumptions and limitations of the study are addressed.

Background and Setting

Need for agriculture teachers.


This need for teachers is also present in agricultural education, where a strong focus in the profession is the recruitment and retention of teachers (Lawver, 2009; “National Teach Ag Campaign - Frequently Asked Questions,” n.d.). School based agricultural education focuses on providing instruction to grades seven through adult to learn about plant and animal production and environmental and natural resources systems (The Council for Agricultural Education, 2012). Agricultural education is one piece of Career and Technical Education, which has seen
lack of educators as a threat to the very existence of other programs, like technology education (Bowling & Ball, 2016). The profession has made an effort to recruit and retain agriculture teachers. Through these efforts the National Teach Ag Campaign was created by the National Association of Agricultural Educators and the National Council for Agricultural Education to support the profession (“National Teach Ag Campaign - Frequently Asked Questions,” n.d.).

The agricultural education profession has completed a supply and demand study of school based agricultural education since 1965. Since the outset of the study, there has always been a lack of agriculture teachers to fill the positions available (Kantrovich, 2010). In 2015, there was a shortage of 287 agriculture teachers with 80 positions remaining vacant (Foster, Lawver, & Smith, 2015) and there were 66 reported vacancies in 2016 (Smith, Lawver, & Foster, 2017). While more effort has been placed on recruiting and retaining teachers in agriculture and other content areas, it is important to identify why individuals are entering the classroom and why they are leaving.

**Teacher preparation programs.**

Teacher education and preparation has evolved since its inception in the mid-19th century and has been impacted by foci in training, learning and policy (Cochran-Smith & Zeichner, 2005). To look at teacher preparation, it is imperative to understand the two main pathways to teacher certification – traditional and alternative. The traditional route to teacher certification has the teacher entering the classroom after completing teacher preparation training through a university teacher preparation program with alternative routes being all the other options (National Research Council, 2010; Walsh & Jacobs, 2007).
In *Studying Teacher Education*, the authors stated “certified” teachers may hold different levels of certifications and “viewing certified teachers as being “qualified” can be problematic” (Cochran-Smith & Zeichner, 2005). To fill positions, teacher standards have been lowered and allowed individuals a “short-cut” into education through emergency and probationary certifications (Darling-Hammond & Sykes, 2003). Cochran-Smith and Zeichner (2005) indicated teachers in specialized areas in the middle and high schools are the group most likely not to be certified in the content area in which they teach. Darling-Hammond and Sykes (2003) indicated there has been an increase in alternative certification programs which focus on preparing teachers to enter the classroom and succeed. It is critical to identify these programs, as well as compare to traditional programs and measure their success.

**Alternative Certification in Agricultural Education.**

Since 2004, alternative certification has become a focus in agricultural education literature. The studies have mainly compared traditionally and alternatively certified teachers in agricultural education. Specifically, the research has centered around the differences in the needs and self-efficacy of traditionally certified and alternatively certified agriculture teachers (Duncan & Ricketts, 2008; Roberts & Dyer, 2004; Robinson & Edwards, 2012; Rocca & Washburn, 2006) and experiences of alternatively certified teachers in Oklahoma (Robinson, 2010; Robinson & Haynes, 2011). While the past 15 years has spurned research in this area, the focus has been restricted to four different states, with only one instance of research highlighting a national and historical view of alternative certification in agricultural education (Bowling & Ball, 2016).
Teacher Turnover.

It is just as important to look at the retention of teachers as it is recruitment and preparation. Darling-Hammond and Sykes (2003) recommended there should be a focus on quality preparation and support, adequate pay and working conditions, and the likelihood of teachers succeeding in the workplace to keep teachers in the classroom. Teachers who choose to leave the classroom are classified as either “movers,” those who go to a different school to teach, and “leavers,” the teachers who exit the profession (Ingersoll, 2001). With the consistent shortage of agriculture teacher in agricultural education, researchers have focused on the attrition of teachers (Clark, Kelsey, & Brown, 2014; Lemons, Brashears, Burris, Meyers, & Price, 2015). Sorensen (2015) also looked at specific reasons agricultural educators may leave the classroom with a study focused in part on turnover intentions. A key variable to the supply and demand of agriculture teachers is ensuring we don’t have “leavers” who create more positions to fill with qualified individuals.

Conceptual Framework

The conceptual framework for this study was modified from a report for the United States Department of Education entitled “An Evaluation of Teachers Trained Through Different Routes to Certification” (Constantine et al., 2009). With teacher preparation and turnover intention being identified as major variables in the literature review, they have been included in the proposed conceptual framework.

Purpose of the Study

This study focused on examining the routes to certification and turnover intentions of Wisconsin agriculture teachers with fewer than three years of teaching agriculture.

Research Questions and Hypotheses

The following research questions and hypotheses lead this study:

1. What are the demographic characteristics of Wisconsin agriculture teachers with fewer than three years of experience teaching agriculture?

2. What are the routes to certification and teacher preparation of Wisconsin agriculture teachers with fewer than three years of experience teaching agriculture?
3. What are the turnover intentions and how they differ by routes to certification for Wisconsin agriculture teachers with fewer than three years of experience teaching agriculture?

- \(H_0\): There is no difference between turnover intentions and routes to certification of Wisconsin agriculture teachers with less than three years of experience teaching agriculture.

Definition of Terms

*Alternative certification:* See ‘alternative routes to certification’.

*Alternative routes to certification:* Alternative routes to certification cover alternate ways to meet teacher requirements or certification. This could include reduced training before entering the classroom or alternative state certifications could look similar to emergency certification (Constantine et al., 2009). In Wisconsin, alternative route programs are accepted by the DPI for licensure in “critical shortage areas” (“Licensing Definitions,” 2016). For this study, this includes all licensure routes except teacher preparation programs at the undergraduate level and agricultural education specific programs at the graduate level.

*Certification:* Teacher preparation programs certify pre-service teachers based on requirements that allow them to be licensed by the Wisconsin Department of Public Instruction (T. Buttles, personal communication, May 17, 2017). Used interchangeably with licensure.

*Department of Public Instruction (DPI):* “The Department of Public Instruction is the state agency that advances public education and libraries in Wisconsin” (“Licensing Definitions,” 2016).
**Educator preparation program:** In Wisconsin there are two options of educator preparation programs, institutions of higher education and alternative route programs (“Licensing Definitions,” 2016).

**License:** “…a document, including permits, issued by the department under this chapter granting authority or permission to serve as an educator in Wisconsin public schools and is available to educators in private religious and nonsectarian schools” (“Licensing Definitions,” 2016).

**Route to certification:** the process teachers go through to gain certification/licensure could include a traditional preparation program at a college/university or alternative program which results in licensure.

**School based agricultural education:** School based agricultural education focuses on providing instruction to grades seven through adult to learn about plant and animal production and environmental and natural resources systems (The Council for Agricultural Education, 2012).

**Teacher turnover:** “Exiting the teaching profession before reaching the age of retirement. Teacher attrition is comprised of two parts: 1) “movers” are teachers who leave one school or district for another; and 2) "leavers," are teachers who exit the profession temporarily or permanently (Ingersoll, 2001). While movers impact schools and school systems, a larger concern for education is the leavers. This term is used synonymously with teacher attrition” (Sorensen, 2015).

**Traditional routes to certification:** “Thirty-three of Wisconsin colleges and universities, public and private, are approved by the DPI to offer licensure programs. These programs lead to
a degree (e.g. Bachelor’s, Master’s, Education Specialist) and/or licensure only based on the licensure program requirements” (“Licensing Definitions,” 2016).

Turnover intentions: “The intent of agriculture teachers to exit the teaching profession before retirement” (Sorensen, 2015).

Assumptions

1. The respondents understood the questionnaire and answered all questions honestly.
2. The respondents were representative of the population of Wisconsin agriculture teachers with fewer than three years of teaching agriculture.
3. The instrument measured turnover intention adequately based on respondents’ answers.

Limitations

1. The results are not generalizable outside of the respondents of the study in the 2016-2017 school year due to a census of the population being conducted.
2. Non-respondent answers may be different than respondents leading to sampling error.
3. Data was self-reported by respondents which may allow for a threat to validity.
4. Turnover intentions cannot be measured for teacher turnover, but only the intent to leave the profession at a specific point in time.
5. Personal bias from my own experiences as an agriculture teacher in Wisconsin leading to how results were interpreted.
Delimitations

1. Definitions of traditional and alternative routes to certification are specific to Wisconsin agricultural education.

2. The population was chosen because of access to contact information and alternative certification in agricultural education in Wisconsin is a recent phenomenon.

3. The results of this study are not generalizable outside of the 35 Wisconsin agriculture teachers that responded (52% response rate).

4. Specific reasons for turnover intentions were not included in the study due to researcher decision to avoid respondent fatigue.
Chapter 2 Review of Literature

Chapter 2 presents an overview of the literature regarding the shortage of agriculture teachers, routes to teacher certification, and teacher attrition. The conceptual framework is discussed in depth and a summary of related literature is given.

Introduction

A shortage of qualified teachers challenges the ability to provide students with a quality education. There are many reasons for the scarcity of teachers in classrooms (Donitsa-Schmidt & Zuzovsky, 2014) and can be attributed to both those who leave the profession and move between schools and districts (National Research Council, 2010). There have been additional pathways to become a teacher introduced as a result of the teacher shortage (National Research Council, 2010) and work to understand the success of the group (Constantine et al., 2009). Agricultural education has been impacted by the nationwide teacher shortage and increase in alternative certified teachers (Foster et al., 2015; Roberts & Dyer, 2004; J. S. Robinson, 2010; J. S. Robinson & Haynes, 2011; S. Robinson & Edwards, 2012; Rocca & Washburn, 2006). This literature review seeks to describe the need for teachers, explain the teacher shortage, routes to certification and intention of agriculture teachers to leave the profession.

Need for Qualified Teachers

A shortage of qualified teachers challenges the ability to provide students with a quality education. In 1983, “A Nation at Risk” (Gardner, 1983) highlighted the challenges the field of education faced including a lack of worthy individuals entering the teaching field, insufficient teacher preparation programs, and teachers having undesirable professional lives. Those
concerns addressed more than thirty years ago still plague the profession. Ingersoll (2001) echoed those claims when he stated, “few educational problems have received more attention in recent times than the failure to ensure elementary and secondary classrooms are staffed with quality teachers” (p. 500).

First, what does it mean to be a quality teacher? Through interviews with innovators in education, both in the United States and Japan, Green (2015) summarized that better teachers “are as curious about wrong answers as they are about right answers – and they encourage students to make mistakes” (p. 324), they don’t adhere to social codes, they focus on reasoning, and most importantly, have support through administration and educational policy. In *Building a Better Teacher*, Green (2015) references the commonly held view that good teachers are born with the skills needed to success in the classroom. Are the great teachers truly born with these skills or is there another driving force? Green (2015) introduced the idea of educational infrastructure, “a set of invisible forces ensuring no teacher is left alone to invent solutions to the complicated and ever-evolving challenges off helping students learn” (p. 328). A major component of educational infrastructure is a focus on induction, teacher education, and professional development (Green, 2015) which provides for quality educators.

Along with quality, a phrase highlighted by the No Child Behind (NCLB) Act is “highly qualified” teachers. While quality and qualified are similar, the term highly qualified in the context of NCLB teachers are required to have a bachelor’s degree, be licensed by the state, and demonstrate content area knowledge (“New No Child Left Behind Flexibility,” 2005). Individual states were charged with quantifying the number of highly qualified teachers, as well as distinguishing ways to encourage highly qualified teachers. To indicate competency:
Teachers (in middle and high school) must prove that they know the subject they teach with: 1) a major in the subject they teach, 2) credits equivalent to a major in the subject, 3) passage of a state-developed test, 4) HOUSSE [high, objective, uniform state standard of evaluation] …, 5) an advanced certification from the state, or 6) a graduate degree. (“New No Child Left Behind Flexibility,” 2005, para. 13)

Glatthorn, Jones, and Adams Bullock (2006) proposed a model for highly qualified teachers which includes a bachelor’s degree and full certification, as well as proficiency in quality learning, the science of teaching, and teacher professionalism. Quality learning according to Glatthorn et al. (2006) is meaningful, focused on content and process knowledge, focused on thinking, and includes scaffolding.

While definitions for quality and qualify teachers are provided, the other concern that “A Nation at Risk” (Gardner, 1983) addressed, having a supply of teachers has not. According to the National Center for Education Statistics (“The NCES Fast Facts Tool,” n.d.), 3.6 million elementary and secondary teachers held full time employment in the United States during the 2011 school year, with approximately 288,000 teachers leaving the profession.

The reasons for teacher shortages were described by Donitsa-Schmidt and Zuzovsky (2014) as occurring on the macro or micro level. The macro level highlights the nation and districts including “…natural student population growth, increased immigration, changes in educational policy and labor agreements” (Donitsa-Schmidt & Zuzovsky, 2014, p. 420). The school is the basis of the micro level (Donitsa-Schmidt & Zuzovsky, 2014) with a focus on location, reputation, teacher attrition, administrative support, discipline issues, and lack of benefits, including pay.
Darling-Hammond and Sykes (2003) highlighted there is not an overall teacher shortage, but a maldistribution of teachers. This is one of the misunderstandings on teacher issues. Other concerns include the focus on solving shortages, when more work needs to be done towards teacher retention (Darling-Hammond & Sykes, 2003).

Specific content areas are facing issues related to shortages and maldistribution. In 2015, school based agricultural education boasted 11,834 agriculture teachers teaching in 8,167 programs nationwide (Foster et al., 2015). There was a shortage of 287 agriculture teachers with a non-licensed teacher filling 207 positions and 80 positions remained vacant. These vacant positions pinpoint a shortage of agriculture teachers to be able to fill all positions (Foster et al., 2015).

**Routes to Teacher Certification**

There is no doubt the topic of teacher recruitment, preparation and retention is a current focus in education (Cochran-Smith, 2008). According to Ingersoll (2001), education policy has implemented programs to bring more teachers into the profession. To focus on recruitment, states have held recruitment drives and provided incentives, like loan forgiveness (Darling-Hammond & Sykes, 2003). To improve teacher retention a focus on quality preparation and support, adequate pay and working conditions, and the likelihood of succeeding in the school were found to be key factors in retaining teachers (Darling-Hammond & Sykes, 2003).

Darling-Hammond and Sykes (2003) indicated knowing how to teach is critical. This includes a combination of subject matter knowledge, academic ability, professional knowledge, and verbal skills (Darling-Hammond & Sykes, 2003). Cochran-Smith (2008, p. 271) declared it is “…now assumed that teachers can – and should – teach all students to world-class standards,
serve as linchpins in educational reforms of all kinds, and produce a well-qualified labor force to preserve the nation’s position in the global economy.” Teachers are responsible for knowing how to teach, as well as expectations to make a difference in the lives of their students and the nation.

How do we ensure teachers are well prepared to tackle these demands? There are many pathways in teacher preparation and with variations across the United States (National Research Council, 2010). Formal teacher education in the United States dates back to the 19th century with normal schools, which focused strictly on teacher preparation. For example, in Wisconsin, normal schools served as post-secondary teacher preparation sites teaching the rules of teaching in the late 1800s and early 1900s (“Historical Timeline of Educator Licensing in Wisconsin,” 2012). By the early 20th century, normal schools had been replaced by university-based education programs as the main site of teacher preparation (National Research Council, 2010).

According to the National Research Council (2010, p. 2), “Between 70 and 80 percent are enrolled in ‘traditional’ programs housed in ‘traditional’ programs housed in postsecondary institutions; the rest enter the profession through one of the approximately 130 ‘alternative’ routes.”

The traditional programs and alternative routes are the two main pathways to teacher certification. It is important to note in teacher education literature, certification and programs or pathways are many times used synonymously. The traditional route to teacher certification has the teacher entering the classroom after completing teacher preparation training through a college or university (Decker et al., 2005). Alternative routes place teachers in the classroom before completing a teacher preparation program (Decker et al., 2005). Traditional programs are commonly located at post-secondary schools and end in a bachelor’s or master’s degree, while
alternative programs serve as a “catch-all for all the other pathways” (National Research Council, 2010, p. 35).

Routes to Certification in Wisconsin

The minimum requirement for teacher certification in Wisconsin according to the Department of Public Instruction (DPI) is possession of a bachelor’s degree (“Pathways to Licensure,” 2012). There are three main pathways to licensure for agriculture teachers in Wisconsin: the bachelor’s degree pathway, alternative route program pathway, and experience-based technical and vocational education subjects pathway. The bachelor’s degree pathway requires individuals to complete all the requirements of the approved teacher licensure program through a university in addition to completing a bachelor’s degree (“Bachelor’s Degree Pathway,” 2012). There are two universities approved to offer agricultural education teacher education programs in Wisconsin, the University of Wisconsin-Platteville and the University of Wisconsin-River Falls (“WI Educator Preparation Program (EPP) Lookup,” n.d.).

The alternative route program pathway is more common among individuals that are changing careers and wanting to teach (“Alternative Route Pathway,” 2012). The pathway requires a bachelor’s degree in the content area of the license, which needs to be a shortage area in the state or region, as well as completion of an alternative route program (“Alternative Route Pathway,” 2012). There are two approved alternative programs for an agriculture license the Cooperative Educational Service Agency (CESA) 6 Residency in Teacher Education (RITE) program and eduCATE-WI (“WI Educator Preparation Program (EPP) Lookup,” n.d.).

The CESA 6 RITE program is a one-year program that provides formal instruction through monthly meetings focusing on classroom instruction, learning theories,
assessment, classroom management, and content area studies. The RITE program also provides mentoring through instructional coaches. ("CESA 6 - Residency in Teacher Education (RITE)," n.d.). The eduCATE-WI alternative program for agriculture is through Project Teaching. The program is approximately 14 months and includes student teaching, as well as 6 weekend sessions to complement online training ("Project Teaching Program," 2015).

The experience-based technical and vocational education subjects pathway requires candidates to have training in the content area, have pedagogical training, as well as a district intent on hiring them to teach ("Experience-based Technical and Vocational Education Subjects Pathway," 2015). Before applying for a license, the candidate must prove their technical and pedagogical experience based on a system of points. School districts must also complete a form indicating their interest in hiring the candidate ("Experience-based Technical and Vocational Education Subjects Pathway," 2015).

**Routes to Certification in CTE and Agricultural Education**

Bowling and Ball (2016), provided an overview of alternative certification within agricultural education and career and technical education (CTE). Agricultural education is one part of CTE; the other areas include: business education, trade and industrial education, technology education, family and consumer sciences, and marketing education (Bowling & Ball, 2016). It is an important distinction even with these programs all being designated CTE areas, they are very different from each other with contrasting licensing requirements, professional organizations, and teacher preparation programs (Gray & Walter, 2001). The majority of CTE preparation programs throughout the 20th century consisted of traditional certification. The 1980s saw an increase in alternative certifications due to teacher shortages.
Camp and Heath-Camp (2007) provided an overview on CTE teacher education and background on enrollments in CTE since the 1980s as an effect of the No Child Left Behind (NCLB) act and other policy changes. According to the authors, there have been declining enrollments at the high school level in CTE due to the focus on increased science, math, and, academic subjects. However, by the early 2000s, policy makers were calling for an increase in CTE and therefore “increases in public secondary school CTE enrollments, and increasing demand for new CTE teachers” (Camp & Heath-Camp, 2007, p. 17).

This demand for increase CTE programs is tied to an increase for the need for CTE teachers. When funding for CTE teacher preparation programs was decreased because of national Perkins funding in the early 1990s, the number of programs themselves decreased (Camp & Heath-Camp, 2007). Gray and Walter (2001) explained “roughly 25% of secondary-level teachers are classified as CTE teachers” (p. 15).

Zirkle, Martin, and McCaslin (2007) studied state certification and licensure requirements for secondary CTE teachers. They found a variety of requirements for certification, which is consistent with other literature (National Research Council, 2010). Zirkle et al. (2007) found the majority of CTE alternative certification programs were similar to other content area alternative certification programs. However, there were differences which arose. CTE alternative programs required occupational experience and not all programs required a bachelor’s degree (Zirkle et al., 2007).

As states have seen an increase in alternatively certified agriculture teachers, studies have been conducted to identify needs. Roberts and Dyer (2004) looked at needs of traditionally and alternatively certified teachers. Differences were found in the majority of constructs, including instruction and curriculum, technical agriculture, program management and planning and teacher
professional development (Roberts & Dyer, 2004). The authors questioned whether alternatively certified teachers do not possess the knowledge to be conscious of what they do not know (Roberts & Dyer, 2004). Two studies exist with a focus on self-efficacy. Rocca and Washburn (2006) compared teacher efficacy between traditionally and alternatively certified agriculture teachers. Alternatively certified teachers in this study had additional occupational experience. There was no difference in perceptions of self-efficacy between the two groups (Rocca & Washburn, 2006). The second study on self-efficacy was conducted by Robinson and Edwards (2012). They found alternatively certified teachers showed a higher increase in growth as indicated through their scores for perceived efficacy. However, alternatively certified teachers showed lower performance scores from university supervisors’ evaluations (Robinson & Edwards, 2012).

It is important to note not all studies on traditionally and alternatively certified teachers have found differences like the previous studies. Truell (1999) found there weren’t any major differences between traditionally and alternatively certified Missouri marketing teachers. In an evaluation of elementary teachers (Constantine et al., 2009), no statistically significant differences were found between traditionally and alternatively certified teachers in average scores on college entrance exams, selectivity of college bachelor’s degree program, level of educational attainment, performance, or effectiveness in the classroom.

**Turnover Intentions**

Darling-Hammond and Sykes (2003, p. 15) stated, “The early exodus of teachers from the profession has been a longstanding problem” and highlighted approximately 30% of new teacher quit after five years. Feistritzer (2011) found only two thirds of public school teachers
planned to be teaching in five years. With only 13% planning on retiring in that time frame, the question remains why the other part of the one third of teachers are leaving the profession.

In an analysis of teacher turnover and teacher shortages, Ingersoll (2001) utilized data from the National Center for Education Statistics’ School and Staffing Survey (SASS) and Teacher Follow-up Survey to examine all teacher turnover. The data indicated the need for teachers came from preretirement turnover. These “leavers” from the profession are costing states and districts, but more importantly students in big cities or rural areas (Darling-Hammond & Sykes, 2003). Ronfeldt, Loeb, and Wyckoff (2013) found empirical evidence of teacher turnover affecting student achievement.

Sorensen, McKim, and Velez (2016) provided a summary of previous research in education regarding teacher turnover. Indicators of teacher attrition include low pay, classroom management, and a high student to teacher ratio. In addition to those factors, agricultural education specific issues included administrative support, excessive workload, and teacher self-efficacy. It is important to identify signs of teacher attrition in order to reverse the trend (Ingersoll & Smith, 2003).

To attempt to identify reasons for teachers to remain in the classroom, Ingersoll found turnover predictors were age, school size, and administrative support, with a sense of community being noteworthy. In a random sampling of SASS data from 2007-2008, Gray and Taie (2015) found in a study of public school teacher attrition and mobility of teachers who continued to teach the next year was correlated with higher salary levels. There was no difference found in teachers moving between schools or leaving teaching due to holding a bachelor’s degree versus a master’s degree (Gray & Taie, 2015).
In CTE, Ruhland (2001) found in a study of University of Minnesota graduates with a vocational teacher license there was a significant difference between leavers and stayers regarding their level of commitment. In the study, individuals who chose to remain teachers indicated a positive teaching experience, felt they were doing a good job, had administrative support, and job security. In Wisconsin, the educational climate changed in 2011 which is correlated to an increase in movers and retirements (Klapoetke & Buttes, 2016). Over a five-year period from 2010 to 2015, “leavers” accounted for 51.9% of teacher position openings, with “movers” representing 33% of openings. Researchers in agricultural education have identified indicators for teachers to remain in or leave the profession.

In a phenomenological study of five career agriculture teachers from Oklahoma, Clark, Kelsey, and Brown found these individuals had a balance of work, family, and community life, they were supported by school and community, and reduced stressors. These teachers found satisfaction in teaching agriculture and shifted their workload over time (Clark et al., 2014). On the other end of the spectrum, Lemons, Brashears, Burris, Meyers, and Price (2015) explored the factors leading to agriculture teachers leaving the classroom. In this qualitative study, former secondary agriculture teachers were found to have left the profession as “… the result of a particular set of circumstances at ‘the right time’” (Lemons et al., 2015, p. 27). These agriculture teachers who left the classroom had positive experiences. However, the life of an agriculture teacher proved burdensome and their expectations of themselves played a role in their leaving (Lemons et al., 2015).

Sorensen (2015) looked at turnover intentions as part of a nationwide study of agriculture teachers. The research showed the agriculture teachers in the study had moderately low intentions to leave the teaching profession before retirement. When asked, agriculture teachers
indicated a more desirable job opportunity, an opportunity to move up in their career, family reasons, lack of compensation for the amount of work done, and excessive workload as the top reasons for leaving the profession (Sorensen, 2015).

**Conceptual Framework**

The conceptual framework for this study is based on work done by the National Center for Education Evaluation and Regional Assistance for the U.S. Department of Education on a project entitled, *An Evaluation of Teachers Trained Through Different Routes to Certification* (Constantine et al., 2009). The national project focused on elementary alternative and traditionally certified teachers regarding the effects on student achievements and the features of teacher certification programs are correlated with teacher effectiveness.

The conceptual framework explored possible connections between the teacher candidates’ background, teacher preparation, pedagogy, school characteristics, and student performance. For this study, the follow conceptual framework is proposed focusing on teacher background and teacher preparation program/certification and tying in how those characteristics impact their likelihood to stay in the classroom.

Previous studies have not looked at the connection between personal and professional background and route to teacher certification in relationship to turnover intentions. Anecdotal evidence has linked routes to certification and turnover intentions. This conceptual framework proposes a possible linkage to personal and professional background and route to teacher
certification to turnover intentions. This to identify if there is a link to warrant further research and development of this conceptual framework.

<table>
<thead>
<tr>
<th>Teacher Candidate Profile</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Personal Background</strong></td>
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<td>Age</td>
</tr>
<tr>
<td>Ethnicity</td>
</tr>
<tr>
<td>Gender</td>
</tr>
<tr>
<td><strong>Professional Background</strong></td>
</tr>
<tr>
<td>Education</td>
</tr>
<tr>
<td>Preparation to teach</td>
</tr>
<tr>
<td>Motivation to select route to teacher certification</td>
</tr>
</tbody>
</table>

Route to Teacher Certification

Turnover Intentions

Chapter 3 Methodology

This chapter provides an overview of the background for the research methodology for this study. Included in this chapter are the purpose, research objectives, research design, population, instrumentation, validity and reliability, data collection, and data analysis.

Purpose of the Study

This study focused on examining the routes to certification and turnover intentions of Wisconsin agriculture teachers with fewer than three years of teaching agriculture.

Research Questions and Hypotheses

The following research questions and hypotheses lead this study:

1. What are the demographic characteristics of Wisconsin agriculture teachers with fewer than three years of experience teaching agriculture?
2. What are the routes to certification and teacher preparation of Wisconsin agriculture teachers with fewer than three years of experience teaching agriculture?
3. What are the turnover intentions and how they differ by routes to certification for Wisconsin agriculture teachers with fewer than three years of experience teaching agriculture?

- $H_0$: There is no difference between turnover intentions and routes to certification of Wisconsin agriculture teachers with less than three years of experience teaching agriculture.
Research Design

Descriptive and correlational methods were used in this study. Descriptive methods were employed to describe demographic characteristics, teacher preparation, routes to certification, and turnover intentions. Correlational methods were utilized to describe the relationship between routes to certification and turnover intentions.

Population

The population of this study were all Wisconsin agriculture teachers with fewer than three years teaching agriculture. An agriculture teacher is defined in this study as an individual teaching middle and/or high school agriculture either full- or part-time. Teachers included in the study may have taught or been licensed to teach other subjects prior to teaching agriculture. However, for this study, they were considered to be in the frame if they had not taught agriculture for more than three years.

The frame for this study was attained by contacting the leader of the Wisconsin Association of Agricultural Education new teacher committee and mentoring program. The list was verified by the agriculture, food and natural resources consultant at the Wisconsin Department of Public Instruction. A census of the population was utilized as recommended by Ary, Jacobs, and Sorensen (2010) because the population was well-defined, small \((n = 67)\), and available contact information available.
Instrumentation

The survey instrument (Appendix A) included questions to identify demographic characteristics and examine routes to certification and turnover intentions. The survey included descriptive questions, as well as previously validated questions regarding turnover intentions. The questionnaire was distributed by email using the survey software Qualtrics™. There were three sections including routes to certification, turnover intentions, and demographic information. The beginning screen for the questionnaire in Qualtrics™ provided participants with an overview of the study and consent information.

The first section asked respondents questions regarding their routes to certification including educational background, how they earned their teaching license, as well as reasons why they earned the license, and student-teaching experiences. Respondents indicate their highest level of education completed including the institution and year for bachelor’s degree, master’s degree, and professional and/or doctoral degree. For the question concerning how they earned their teaching license, there were categorical options: a traditional teacher preparation program as part of a bachelor’s degree, a traditional preparation program as part of a master’s degree/licensure program, an alternative teacher preparation program completed after being hired as a teacher, experience-based license pathway, and other with a forced response to provide a text description. The options were coded as 1, 2, 3, 4, and 5.

Respondents who indicated they earned their license through an alternative teacher preparation program were asked a follow-up question to identify the name of the alternative teacher preparation program they completed. For all respondents, a dichotomous question about if they added an agriculture license to an existing license was asked. If respondents answered yes, they were asked to list the prior licenses through an open-ended response question. To
identify the reasons why respondents chose to get a teaching license, they marked all that applied to ten statements, with an open-response option for other. To identify student teaching experiences, a forced-response question was asked if respondents completed any student/practice teaching that was part of a teacher preparation program before beginning their first teaching position. If respondents answered yes, they were asked how long their student/practice teaching lasted with three categorical options coded 1, 2, and 3 respectively.

The second section, teacher turnover intentions, utilized a portion of the instrument used by Sorensen (2015) to identify teacher’s intent to exit the profession prior to retirement. Respondents rated eight statements on a six-point scale (from $1 = \text{strongly disagree}$ to $6 = \text{strongly agree}$.)

The third section focused on personal and professional traits to describe the respondents. Participants were asked to indicate their age (continuous variable), sex (dichotomous variable), and ethnic/racial identification (categorical variables). They were asked to identify the number of years they have been employed as an agriculture teacher including the current year (open-ended question), distinguish the location of the school where they teach (categorical variable), and describe their full-time teaching assignment (categorical variable).

**Pilot Test, Validity, and Reliability**

A pilot study was conducted on Oregon agriculture teachers with fewer than five years of experience utilizing Qualtrics™. The questionnaire was sent via email for teachers to complete online. The focus of the pilot study ($n = 17$) was to determine any modifications that needed to be made to the final instruments.
Leedy and Ormond (2016) stated there are several types of validity of an instrument, each of which is important. A panel of experts from Oregon State University and Wisconsin agricultural education and department of public instruction assessed the instrument for face and content validity. Face validity is “the extent to which … an instrument *looks like* it is measuring a particular characteristic” (Leedy & Ormond, 2016, p. 97) and content validity refers to the instrument’s ability to measure the subject matter it is supposed to be measuring (Leedy & Ormond, 2016). Based on the pilot study and panel feedback, questions regarding work experience were removed and other questions were reworded to provide clarity.

Reliability is “the consistency with which a measurement instrument yields a certain, consistent result when the entity being measured hasn’t changed” (Leedy & Ormond, 2016, p. 98). Using SPSS 24, the turnover intentions construct was analyzed for post-hoc reliability and had an estimated Cronbach’s alpha of .95 for the eight statements. Other questions in the instrument were descriptive in nature and did not provide concern for reliability, so no more analysis was completed in that regard.

**Data Collection**

Data collection began in March 2017 with an invitation via electronic communication for all Wisconsin agriculture teachers with fewer than three years of experience teaching agriculture. Dillman’s tailored design method (2014) was utilized for structuring data collection. The study and data collection was approved as exempt via the Institutional Review Board at Oregon State University. The approval number is 7948.

All Wisconsin agriculture teachers with fewer than three years of experience teaching agriculture were sent an initial email (see Appendix A) that was personalized and invited them to
participate in the study. Three days after the preliminary contact, an email was sent containing a link to the survey (see Appendix B). A follow-up email was sent two weeks later to non-respondents (see Appendix C). The final reminder email (see Appendix D) was sent four weeks after the first email contact. In the end, 35 teachers completed the instrument out of the 67 agriculture teachers in the population with a 52% response rate. The consent document was included in the first page of the survey and respondents who gave their consent did so by selecting the “next” button in Qualtrics.

According to Dillman, Smyth, and Christian (2014), “nonresponse error results when people selected for a survey who do not respond are different in a way that is important to the study from those who do respond” (p. 19). Nonresponse error was a concern with 48% of the population not participating in the study. Ary et al. (2010) recommended three types of action to identify if respondents and non-respondents differ: compare respondents to population, compare early to late respondents, and interview a sample of non-respondents. Lindner, Murphy, and Briers (2001) suggest the best option to test for non-response is to contact non-respondents directly. Due to time and lack of contact information besides emails, non-respondents were not contacted. The next suggestion from Linder et al. (2001), is to compare early and late respondents by waves of contact, in this case the emails received by participants prompting them to participate in the study. Due to the small number of respondents ($n = 8$) for the last two stimuli, another suggestion by Linder et al. (2001) was utilized. The authors suggested if respondents cannot be categorized by waves of responses, “late respondents be defined operationally and arbitrarily as the later 50% of the respondents” (Lindner et al., 2001, p. 52). The first half of respondents completed the instrument after the first stimuli, while the latter half responded to the three other waves.
The Mann-Whitney U test was performed to compare early \( n = 16 \) and late \( n = 17 \) respondents for the variables of interest: highest level of education, route to earning teaching license, work situation (FTE status), and turnover intentions. There were no statistical differences for any of the variables of interest \( (p\text{-value} > .05) \) and non-response error was not significant in this study using the methods of Linder et al. (2001).

**Data Analysis**

The data collected was examined using SPSS 24. Descriptive statistics were utilized to explore the data including: frequencies, means, standard deviations, non-parametric t-test, and correlations.

**Objective One.**

The first objective was to describe the demographic characteristics of Wisconsin agriculture teachers with fewer than three years of experience teaching agriculture. Characteristics including age, sex, racial/ethnic identity, years of teaching agriculture, location of school where they teach, and teaching assignment were analyzed using frequencies and percentages of the entire group and filtered by the new routes to certification variable allowed results to be separated by traditional and alternatively certified teachers.

**Objective Two.**

The second objective was to define the routes to certification and teacher preparation. To analyze the data, frequencies and percentages were used for the highest level of education, year completed degree, institutions attended, route to earning a teaching license,
reasons for attaining a teaching license, and student teaching participation. Responses to the ‘other’ category for responses for a route to earning a teaching license were recoded to the appropriate category. The responses which didn’t fit into another category were from respondents who went through an alternative teacher preparation program completed before being hired as a teacher. A new variable was created from the responses for route to earning a teaching license.

There were two possible categories for the routes. The first category, traditional certification, consisted of the responses for a traditional teacher preparation program as part of a bachelor’s degree. There were no responses for a traditional teacher preparation program as part of a master’s degree/licensure program so it was not included, although it would have been if there had been any respondents in that category. The second category, alternative certification, was created by combining an alternative teacher preparation program completed after being hired as a teacher, an alternative teacher preparation program completed before being hired as a teacher, and experience-based license pathway. Frequencies and percentages were again run for the entire group and then filtered by traditional and alternative certification groups.

**Objective Three.**

Objective three, examines the turnover intentions and how they differ by routes to certification. Four of the statements regarding turnover intentions were reverse coded to provide a correct representation for the overall mean score of the construct. A new variable, turnover, was created the computed the mean score for each respondent. A grand mean was calculated for turnover intentions for all respondents, traditionally certified respondents, and alternatively certified respondents. Turnover intentions and routes to certification were analyzed through the
Mann-Whitney U test and Spearman rho correlations to compare the turnover intention of the traditional and alternative certification groups.

A significance level of $\alpha \leq 0.05$ was adopted for this study. Effect sizes were adapted from Cohen (1992): $\rho > .10 =$ small effect, $\rho > .30 =$ medium effect, and $\rho > .50 =$ large effect.
Chapter 4 Results

This study focused on examining the routes to certification and turnover intentions of Wisconsin agriculture teachers with fewer than three years of teaching agriculture. The population for this study was a census of Wisconsin agriculture teachers with fewer than three years of teaching agriculture as of spring 2017.

Purpose

This study focused on examining the routes to certification and turnover intentions of Wisconsin agriculture teachers with fewer than three years of teaching agriculture. The population for this study was a census of Wisconsin agriculture teachers with fewer than three years of teaching agriculture as of spring 2017.

Research Questions and Hypotheses

The following research questions and hypotheses lead this study:

1. What are the demographic characteristics of Wisconsin agriculture teachers with fewer than three years of experience teaching agriculture?
2. What are the routes to certification and teacher preparation of Wisconsin agriculture teachers with fewer than three years of experience teaching agriculture?
3. What are the turnover intentions for Wisconsin agriculture teachers with fewer than three years of experience teaching agriculture?
Research Question #1

Research question number one focused on the demographic characteristics of respondents. The demographic characteristics portion of the survey sought to identify personal and teaching characteristics. Questions about personal characteristics included age, sex, and racial/ethnic identity with questions about teaching characteristics focused on how many years the respondents had taught agriculture, location of the school, and whether they had a full- or part-time teaching assignment.

The ages of the participants were from 23 to 55. The mean age was 29.91 with a standard deviation of 8.56. Fifty percent of respondents were under 30 and 11.5% being over 40. When comparing traditionally certified and alternatively certified teachers, the scope of ages of both groups was similar. However, the mean age of AC teachers was 7.68 higher than TC teachers. Table 1 lists the ages of respondents with frequency and percentages.

Table 1

*Age of Respondents (n = 35)*

<table>
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<th>Age of Respondents</th>
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<th></th>
<th>AC</th>
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</table>
For sex, the majority of respondents (71.40%) were female and 28.60% of respondents were male. Figure 4 shows the breakdown of male and female respondents for this study. When looking at the percentages of males and females separated by traditionally and alternatively certified, both groups have similar findings (see Figures 5 and 6). Overall for males, 70% were traditionally certified, as were 72% of females.

*Figure 4. Sex of Wisconsin agriculture teachers with fewer than three years of experience teaching agriculture (n=35)*
Regarding racial and ethnic identity, 97.10% of respondents identify as “White, European American, Non-Hispanic.” One participant declined to respond. Table 2 lists the respondents’ ethnicity and race with frequency and percentages. There were no respondents who indicated
they were Hispanic, Native American, African American, Asian American or other.

Table 2

*Ethnicity of Respondents*

<table>
<thead>
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<th>Ethnicity of Respondent</th>
<th>( f )</th>
<th>%</th>
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<tr>
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<td>34.00</td>
<td>97.10</td>
</tr>
<tr>
<td>Decline to respond</td>
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<td>2.90</td>
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</table>

In regards to their teaching characteristics, respondents were asked how many years they had taught agriculture. Teachers taught from 1 to 3 years which fit within the sample. The majority of respondents taught for two years (40%). There were only 20% of alternatively certified teachers who had been employed as an agriculture teacher for three years. Table 3 highlights the responses to number of years teaching agriculture.

Table 3

*Number of Years Employed as an Agriculture Teacher (n=35)*

<table>
<thead>
<tr>
<th>Years of employment</th>
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<th></th>
<th>AC</th>
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<td>%</td>
<td>( f )</td>
<td>%</td>
<td>( f )</td>
<td>%</td>
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<td>4</td>
<td>40.00</td>
<td>14</td>
<td>40.00</td>
</tr>
<tr>
<td>3</td>
<td>8</td>
<td>32.00</td>
<td>2</td>
<td>20.00</td>
<td>10</td>
<td>28.60</td>
</tr>
</tbody>
</table>

The majority of respondents indicated they teach in a rural setting (71.30%). Those who taught in a suburban setting represented 17.10% of the population and 8.60% taught in an urban setting. Alternatively certified teachers were the only respondents who indicated they taught in an urban setting. Table 4 includes a breakdown of locations by frequencies and percentages.
The majority of respondents (68.6%) indicated they taught full-time agriculture. This was consistent across the traditionally (54.3%) and alternatively (14.3%) certified groups as well. There were more teachers who taught full-time, but taught classes outside of the agriculture department to supplement their teaching assignment (22.9%) than agriculture teachers who only had part-time teaching assignments (8.6%). Table 5 highlights the responses regarding respondents’ teaching assignments.

Table 5

**Teaching Assignment (n = 35)**

<table>
<thead>
<tr>
<th>Teaching Assignment</th>
<th>TC</th>
<th></th>
<th>AC</th>
<th></th>
<th>Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
</tr>
<tr>
<td>Full-time</td>
<td>19</td>
<td>54.30</td>
<td>5</td>
<td>14.30</td>
<td>24</td>
<td>68.60</td>
</tr>
<tr>
<td>Full-time with non-agriculture courses</td>
<td>5</td>
<td>14.30</td>
<td>3</td>
<td>8.60</td>
<td>8</td>
<td>22.90</td>
</tr>
<tr>
<td>Part-time</td>
<td>1</td>
<td>2.90</td>
<td>2</td>
<td>5.70</td>
<td>3</td>
<td>8.60</td>
</tr>
</tbody>
</table>

**Research Question #2**

The second research question sought to identify the routes to certification and teacher preparation of Wisconsin agriculture teachers with fewer than three years of teaching agriculture. Level of education, type of teaching license, reasons for gaining license, and information regarding student teaching was collected.
**Highest Level of Education.**

Respondents were asked to indicate their highest level of education completed. The majority of respondents (80%) received a bachelor’s degree. Of the rest of the respondents, 17% indicated their highest degree was a master’s degree and one respondent (2.9%) indicated their highest degree was a doctoral degree or other professional degree. None of the respondents indicated their highest level of education was high school/GED or an associate’s degree. There was not a large difference when comparing traditionally and alternatively certified teachers in regards to their highest level of education. Table 6 shows the breakdown of the highest level of education including frequencies and percentages.

**Table 6**

*Highest Level of Education (n=35)*

<table>
<thead>
<tr>
<th>Level of Education</th>
<th>TC</th>
<th>AC</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(f )</td>
<td>(% )</td>
<td>(f )</td>
</tr>
<tr>
<td>Bachelor’s Degree</td>
<td>22</td>
<td>63.00</td>
<td>6</td>
</tr>
<tr>
<td>Master’s Degree</td>
<td>3</td>
<td>8.50</td>
<td>3</td>
</tr>
<tr>
<td>Doctoral or other professional degrees</td>
<td>1</td>
<td>2.90</td>
<td>1</td>
</tr>
</tbody>
</table>

Participants were asked what year they completed their degree(s) and the institution where they completed the degree. The respondent who indicated they had completed a doctoral or other professional degree graduated in 1988 from the University of Wisconsin School of Veterinary Medicine. There were six respondents (17.1%) who indicated their highest degree completed was a master’s degree. They completed the degrees between 2001-2016 at six different institutions. Tables 7 and 8 highlight the year the master’s degrees were completed and institutions attended.
Table 7

College/university of completed master’s degree (n=6)

<table>
<thead>
<tr>
<th>Year</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorado State University*</td>
<td>1</td>
<td>16.70</td>
</tr>
<tr>
<td>Marian University</td>
<td>1</td>
<td>16.70</td>
</tr>
<tr>
<td>South Dakota State University*</td>
<td>1</td>
<td>16.70</td>
</tr>
<tr>
<td>St. Mary’s University (Minnesota)</td>
<td>1</td>
<td>16.70</td>
</tr>
<tr>
<td>University of Phoenix</td>
<td>1</td>
<td>16.70</td>
</tr>
<tr>
<td>UW-River Falls*</td>
<td>1</td>
<td>16.70</td>
</tr>
</tbody>
</table>

Note. *Colleges attended by alternatively certified teachers.

Respondents received their bachelor’s degrees from 1983-2017. These respondents include those with a higher degree. The majority of respondents (49.90%) completed their degree from 2014-2017, which includes only traditionally certified teachers. One respondent declined to respond to the year they completed their degree. When comparing alternatively and traditionally certified teachers, alternatively certified teachers earned their degrees starting eleven years earlier and ending in 2013. In regards to institutions where the bachelor’s degrees were completed, there was only one traditionally certified teacher who did not receive their bachelor’s degree in Wisconsin. Approximately half of all respondents attended the University of Wisconsin-River Falls (51.40%). Tables 8 and 9 provide a breakdown of years and colleges/universities attended.
Table 8

Year completed bachelor’s degree (n = 34)

<table>
<thead>
<tr>
<th>Year completed bachelor’s degree</th>
<th>TC</th>
<th>AC</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
</tr>
<tr>
<td>1983</td>
<td>1</td>
<td>2.90</td>
<td>1</td>
</tr>
<tr>
<td>1984</td>
<td>1</td>
<td>2.90</td>
<td>1</td>
</tr>
<tr>
<td>1994</td>
<td>1</td>
<td>2.90</td>
<td>1</td>
</tr>
<tr>
<td>1999</td>
<td>1</td>
<td>2.90</td>
<td>1</td>
</tr>
<tr>
<td>2002</td>
<td>2</td>
<td>5.90</td>
<td>1</td>
</tr>
<tr>
<td>2004</td>
<td>1</td>
<td>2.90</td>
<td>1</td>
</tr>
<tr>
<td>2007</td>
<td>1</td>
<td>2.90</td>
<td>1</td>
</tr>
<tr>
<td>2009</td>
<td>1</td>
<td>2.90</td>
<td>1</td>
</tr>
<tr>
<td>2010</td>
<td>1</td>
<td>2.90</td>
<td>1</td>
</tr>
<tr>
<td>2011</td>
<td>1</td>
<td>2.90</td>
<td>2</td>
</tr>
<tr>
<td>2012</td>
<td>1</td>
<td>2.90</td>
<td>1</td>
</tr>
<tr>
<td>2013</td>
<td>1</td>
<td>2.90</td>
<td>1</td>
</tr>
<tr>
<td>2014</td>
<td>5</td>
<td>14.70</td>
<td>5</td>
</tr>
<tr>
<td>2015</td>
<td>8</td>
<td>23.50</td>
<td>8</td>
</tr>
<tr>
<td>2016</td>
<td>3</td>
<td>8.80</td>
<td>3</td>
</tr>
<tr>
<td>2017</td>
<td>1</td>
<td>2.90</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 9

College/university of completed bachelor’s degree (n=35)

<table>
<thead>
<tr>
<th>Level of Education</th>
<th>TC</th>
<th>AC</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knox College (Illinois)</td>
<td>1 2.90</td>
<td>1 2.90</td>
<td>2 5.80</td>
</tr>
<tr>
<td>Mesa State College (Arizona)</td>
<td></td>
<td>1 2.90</td>
<td>1 2.90</td>
</tr>
<tr>
<td>University of Minnesota-Twin Cities</td>
<td>1 2.80</td>
<td>1 2.90</td>
<td>2 5.70</td>
</tr>
<tr>
<td>University of Wisconsin-Madison</td>
<td>1 2.90</td>
<td>1 2.90</td>
<td>2 5.70</td>
</tr>
<tr>
<td>University of Wisconsin-Platteville</td>
<td>7 20.00</td>
<td>3 8.60</td>
<td>10 28.60</td>
</tr>
<tr>
<td>University of Wisconsin-River Falls</td>
<td>14 40.00</td>
<td>4 11.40</td>
<td>18 51.40</td>
</tr>
<tr>
<td>University of Wisconsin-Stevens Point</td>
<td>2 5.70</td>
<td></td>
<td>2 5.70</td>
</tr>
</tbody>
</table>

**Licensing and Routes to Certification.**

When asked how they earned their teaching license, the majority of respondents (71.4%) indicated they went through a traditional teacher preparation program as part of a bachelor’s
degree program. There were no respondents who indicated they had participated in a traditional teacher preparation program as part of a master’s degree program. The rest of respondents were distributed across alternative certification programs (20%) and applying for a new experience-based license. Table 10 highlights the routes to earning a teaching license with frequencies and percentages.

Table 10

*Route to earning teaching license (n = 35)*

<table>
<thead>
<tr>
<th>Route</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>A traditional teacher preparation program as part of a bachelor’s degree program</td>
<td>25</td>
<td>71.40</td>
</tr>
<tr>
<td>An alternative teacher preparation program completed before being hired</td>
<td>4</td>
<td>11.40</td>
</tr>
<tr>
<td>An alternative teacher preparation program completed after being hired</td>
<td>3</td>
<td>8.60</td>
</tr>
<tr>
<td>Experience-based license</td>
<td>3</td>
<td>8.60</td>
</tr>
</tbody>
</table>

The respondents who indicated they had completed an alternative teacher preparation program after being hired were asked which alternative certification program they completed. There were three who responded and indicated the program was Project Teaching through eduCATE-WI and one individual answered the Milwaukee Teacher Education Center. In the questionnaire, there was an option to indicate “other” and write-in a response. One participant noted they had earned their license through the University of Wisconsin-River Falls STEMteach program. This program was determined to be an alternative certification program by the researcher and included as such.

Eight respondents signified they had a previous teaching license in another area before adding an agriculture license. The majority of respondents (75%) had a license in a science area prior to adding an agriculture license. Two respondents indicated they held a language license and one individual was licensed in physical education and health. There was one respondent who
listed they held a substitute teaching license prior to gaining an agriculture license. Table 11 shows the eight respondents’ answers with one respondent answer per line.

Table 11

*Existing licenses prior to adding an agriculture license (n=8)*

<table>
<thead>
<tr>
<th>Existing licenses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology, life science, environmental science, earth and space science</td>
</tr>
<tr>
<td>Biology, life science, environmental education, broadfield science</td>
</tr>
<tr>
<td>Broadfield science, biology, chemistry</td>
</tr>
<tr>
<td>Earth and space science</td>
</tr>
<tr>
<td>German</td>
</tr>
<tr>
<td>Physical education, health, biology</td>
</tr>
<tr>
<td>Spanish, biology</td>
</tr>
<tr>
<td>Substitute license</td>
</tr>
</tbody>
</table>

Respondents selected all that applied from a list of statements about why they became a teacher. The majority of respondents (71.4%) noted as an undergraduate they planned to be a teacher and took all necessary courses to become certified. No one answered that as an undergraduate, they planned to teach but did not want to take the necessary courses to become certified. A quarter of respondents (25.7%) signified as an undergraduate they didn’t have plans to teach. Table 12 shows a listing of the choices and the frequencies and percentages from the entire population.
Table 12

*Reason to Attain Teaching License (n = 35)*

<table>
<thead>
<tr>
<th>Choice</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>As an undergraduate, I planned to be a teacher and so took all necessary courses to become certified.</td>
<td>25</td>
<td>71.40</td>
</tr>
<tr>
<td>As an undergraduate, I didn’t have plans to teach.</td>
<td>9</td>
<td>25.70</td>
</tr>
<tr>
<td>I chose a route to becoming a certified teacher based on a program that was conveniently located.</td>
<td>6</td>
<td>17.10</td>
</tr>
<tr>
<td>I chose a route to becoming a certified teacher that would allow me to become certified while working full-time.</td>
<td>5</td>
<td>14.30</td>
</tr>
<tr>
<td>I chose a route to becoming a certified teacher based on the requirements of the school, district, or state in which I wanted to teach.</td>
<td>4</td>
<td>11.40</td>
</tr>
<tr>
<td>As an undergraduate, I was intent on pursuing a specific, non-teaching career.</td>
<td>4</td>
<td>11.40</td>
</tr>
<tr>
<td>I chose a route to becoming a certified teacher that required coursework and training that fits my schedule.</td>
<td>4</td>
<td>11.40</td>
</tr>
<tr>
<td>I chose a route to becoming a certified teacher based on financial considerations.</td>
<td>3</td>
<td>8.60</td>
</tr>
<tr>
<td>I pursued teaching as part of my master’s studies.</td>
<td>2</td>
<td>5.70</td>
</tr>
</tbody>
</table>

*Note.* Respondents marked all statements that applied to them.

From the respondents who were classified as alternatively certified, 70% indicated as an undergraduate they did not plan to teach. A majority of the group chose a route to becoming a certified teacher which allowed them to work full-time (50%), based on a program that was conveniently located (40%), and had required coursework and training that fit their schedule (40%). For the traditionally certified group, no respondents indicated they chose a route to becoming a teacher which would allow them to become certified while working full-time, required coursework and training that fits their schedule, or as part of their master’s studies. No respondents indicated they planned to teach, but didn’t want to take the necessary courses to become certified. The majority (96%) indicated they planned to be a teacher as an undergraduate and so they took all the necessary courses to become certified. Table 13 and 14 show the answers for separately for the alternatively and traditionally certified groups.
Table 13

*Alternatively Certified Teachers Reasons to Attain Teaching License (n=10)*

<table>
<thead>
<tr>
<th>Choice</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>As an undergraduate, I didn’t have plans to teach.</td>
<td>7</td>
<td>70.00</td>
</tr>
<tr>
<td>I chose a route to becoming a certified teacher that would allow me to become certified while working full-time.</td>
<td>5</td>
<td>50.00</td>
</tr>
<tr>
<td>I chose a route to becoming a certified teacher based on a program that was conveniently located.</td>
<td>4</td>
<td>40.00</td>
</tr>
<tr>
<td>I chose a route to becoming a certified teacher that required coursework and training that fits my schedule.</td>
<td>4</td>
<td>40.00</td>
</tr>
<tr>
<td>As an undergraduate, I was intent on pursuing a specific, non-teaching career.</td>
<td>3</td>
<td>30.00</td>
</tr>
<tr>
<td>I chose a route to becoming a certified teacher based on the requirements of the school, district, or state in which I wanted to teach.</td>
<td>2</td>
<td>20.00</td>
</tr>
<tr>
<td>I chose a route to becoming a certified teacher based on financial considerations.</td>
<td>2</td>
<td>20.00</td>
</tr>
<tr>
<td>I pursued teaching as part of my master’s studies.</td>
<td>2</td>
<td>20.00</td>
</tr>
<tr>
<td>As an undergraduate, I planned to be a teacher and so took all necessary courses to become certified.</td>
<td>1</td>
<td>10.00</td>
</tr>
</tbody>
</table>

*Note.* Respondents marked all statements that applied to them.

Table 14

*Traditionally Certified Teachers Reasons to Attain Teaching License (n=25)*

<table>
<thead>
<tr>
<th>Choice</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>As an undergraduate, I planned to be a teacher and so took all necessary courses to become certified.</td>
<td>24</td>
<td>96.00</td>
</tr>
<tr>
<td>As an undergraduate, I didn’t have plans to teach.</td>
<td>2</td>
<td>8.00</td>
</tr>
<tr>
<td>I chose a route to becoming a certified teacher based on a program that was conveniently located.</td>
<td>2</td>
<td>8.00</td>
</tr>
<tr>
<td>I chose a route to becoming a certified teacher based on the requirements of the school, district, or state in which I wanted to teach.</td>
<td>2</td>
<td>8.00</td>
</tr>
<tr>
<td>As an undergraduate, I was intent on pursuing a specific, non-teaching career.</td>
<td>1</td>
<td>4.00</td>
</tr>
<tr>
<td>I chose a route to becoming a certified teacher based on financial considerations.</td>
<td>1</td>
<td>4.00</td>
</tr>
</tbody>
</table>

*Note.* Respondents marked all statements that applied to them.
The majority of respondents (82.9%) indicated they completed a student/practice teaching experience as part of their teaching preparation program and all noted their student/practice teaching was 10 weeks or more. All of the traditionally certified teachers completed a student teaching experience, with only 40% of the alternatively certified teachers having student taught. Table 15 has a breakdown of traditionally and alternatively certified respondents.

Table 15

*Summary of student teaching (n=35)*

<table>
<thead>
<tr>
<th></th>
<th>TC</th>
<th></th>
<th>AC</th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
<td>f</td>
</tr>
<tr>
<td>Completed student teaching</td>
<td>25</td>
<td>100.00</td>
<td>4</td>
<td>40.00</td>
<td>29</td>
</tr>
</tbody>
</table>

**Research Question #3**

Research question 3 sought to identify respondent’s turnover intentions and if they differed by certification route. Turnover intentions were measured by a six-point scale ranging from strongly disagree (1) to strongly agree (6). Table 18 showcases the eight turnover intention statements with means and standard deviations.
Table 16

*Turnover Intention Statements in Rank Order (n = 35)*

<table>
<thead>
<tr>
<th>Turnover Intention Statements</th>
<th>TC (n = 25)</th>
<th>AC (n = 10)</th>
<th>Total (n = 35)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>It would take a unique set of circumstances for me to leave my position as an agriculture teacher.</td>
<td>4.28</td>
<td>1.30</td>
<td>4.00</td>
</tr>
<tr>
<td>I do not plan to leave my job as an agriculture teacher.</td>
<td>3.96</td>
<td>1.57</td>
<td>3.70</td>
</tr>
<tr>
<td>I plan to remain teaching agriculture until I am able to retire.</td>
<td>3.92</td>
<td>1.38</td>
<td>3.70</td>
</tr>
<tr>
<td>I plan to remain teaching agriculture until I am physically no longer able to teach.</td>
<td>3.48</td>
<td>1.41</td>
<td>3.20</td>
</tr>
<tr>
<td>I plan to leave teaching agriculture sometime before I am eligible to retire.</td>
<td>3.32</td>
<td>1.35</td>
<td>2.90</td>
</tr>
<tr>
<td>If I could get another job different from being an agriculture teacher, I would take it.</td>
<td>3.04</td>
<td>1.27</td>
<td>3.10</td>
</tr>
<tr>
<td>I am preparing to take advantage of the right opportunity to leave my position as an agriculture teacher.</td>
<td>2.56</td>
<td>1.19</td>
<td>2.60</td>
</tr>
<tr>
<td>I plan to leave my job as an agriculture teacher as soon as I am able.</td>
<td>2.00</td>
<td>1.23</td>
<td>2.30</td>
</tr>
</tbody>
</table>
Generally, there was a moderately low turnover intention for the group \( (M = 2.95, SD = 1.13) \). Alternatively certified respondents had a somewhat higher turnover intention \( (M = 3.04, SD = 1.13) \) than traditionally certified teachers \( (M = 2.91, SD = 1.16) \). There was not a statistically significant difference between alternatively and traditionally certified teachers \( (U = 130.50, p – value = .843) \).
Chapter 5 Summary, Conclusions, Implications, and Recommendations

This chapter offers a summary of the study, including the purpose, research questions, methods, and findings. It also includes conclusions and recommendations for future research and practices regarding alternative and traditional routes to teacher preparation and turnover intention. Conclusions and recommendations are only generalizable to the respondents of this study.

Purpose

This study focused on examining the routes to certification and turnover intentions of Wisconsin agriculture teachers with fewer than three years of teaching agriculture. The population for this study was a census of Wisconsin agriculture teachers with fewer than three years of teaching agriculture as of spring 2017.

Research Questions and Hypotheses

The following research questions and hypotheses lead this study:

1. What are the demographic characteristics of Wisconsin agriculture teachers with fewer than three years of experience teaching agriculture?

2. What are the routes to certification and teacher preparation of Wisconsin agriculture teachers with fewer than three years of experience teaching agriculture?

3. What are the turnover intentions for Wisconsin agriculture teachers with fewer than three years of experience teaching agriculture?

Methods
This study utilized descriptive and correlational methods to examine the routes to certification and turnover intentions of Wisconsin agriculture teachers with fewer than three years of teaching agriculture. A survey instrument collected information from all Wisconsin agriculture teachers with fewer than three years of experience as identified by the Wisconsin Association of Agricultural Educators using the survey software Qualtrics™.

**Population**

The population of this study were all Wisconsin agriculture teachers with fewer than three years teaching agriculture in the spring of 2017 \( (n = 35) \). This group included individuals who went through a traditional route of teacher preparation \( (n = 25) \) and an alternative route \( (n = 10) \).

**Instrumentation**

The survey instrument (Appendix A) included questions to identify demographic characteristics and examine routes to certification and turnover intentions. The survey included descriptive questions, as well as previously validated questions regarding turnover intentions.

**Data Collection**

Data collection was completed by making four points of contacts with participant via email. The first contact was a personalized email with a link to participate in the study. Three days after the first contact, an email was sent to non-respondents as a reminder to participate. A follow-up email was sent two weeks later to non-respondents, with a final reminder occurring
four weeks after the initial email invitation. The final response rate was 52% with 35 respondents out of the 67 agriculture teachers in the population.

Data Analysis

Summary of Findings including Conclusions

Objective 1.

Objective one focused on describing the demographic characteristics of Wisconsin agriculture teachers who had taught agriculture for fewer than three years. The agriculture teachers in their first three years of teaching agriculture were between 23 to 55 years of age. The majority of respondents (50%) were under the age of 30. The average age of alternatively certified teachers was 7.68 years higher than the mean of traditionally certified teachers indicating alternatively certified teachers are entering the profession later in life.

Overall, approximately 70% of all agriculture teachers in Wisconsin in their first three years of teaching were female. This was true when looking at the breakdown of both traditionally certified and alternatively certified teachers. This finding compares to the upward trend of females in the profession. In Wisconsin, 53% of agriculture teachers were female during the 2016-2017 school year (J. Hicken, personal communication, May 9, 2017). According to the 2016 National Agricultural Education Supply and Demand Study (Smith et al., 2017) 67% of agricultural education teacher education program completers were license-eligible. This 2:1 ratio of females to males matches with the respondents of the agriculture teachers in Wisconsin in their first three years.

All (97.10%) but one respondent, who declined to respond, indicated they were White, European, Non-Hispanic. This number is slightly higher than the new agricultural education
graduates in teacher education (Smith et al., 2017) with 89.50% of the population reporting as White, Non-Hispanic.

Respondents had all taught agriculture for fewer than three years, as was the population of this study. It is important to note some respondents had taught for longer than three years, but had not taught agriculture prior to the 2014-2015 school year. The majority of respondents taught in rural areas (71.30%), which is slightly higher than the 53% of rural school districts in Wisconsin (J. Hicken, personal communication, May 9, 2017). It is interesting to note there were no traditionally certified teachers who reported they teach in an urban area. Slightly more than half (68.60%) of respondents shared they have a full-time teaching assignment in agriculture. There was 22.90% of respondents had a full-time teaching assignment, but taught content in addition to agriculture. This corresponds to the question in objective two which identified eight respondents added an agriculture license, although participants were not asked what non-agriculture courses they were teaching.

**Objective 2.**

The majority of respondents' highest degree earned was a bachelor's degree (80%), with 17% having earned a master's degree, and one respondent earning a doctoral or other professional degree. This is not a surprising finding, as the minimum requirements for a teaching license in Wisconsin is a bachelor's degree (“Pathways to Licensure,” 2012). There was not a large difference when comparing traditionally and alternatively certified teachers in regards to their highest level of education. However, it should be noted the one respondent who held a doctoral or other professional degree was alternatively certified. This individual indicated they
had graduated from the University of Wisconsin School of Veterinary Medicine in 1988 and it can be inferred this individual could have been a veterinarian before entering the classroom.

For the six individuals who indicated they had earned a master's degree, there was no clear patterns in the year completed or college/university attended. There were only two individuals who completed their degree in the same year, 2016, and each attended a different university. All respondents earned their bachelor's degree, with the majority (49.90%) completing their programs after 2014. This relates to the fact the earliest the respondents in this study would have began teaching agriculture was during the 2014-2015 school year. The 51.10% of respondents who graduated with their bachelor's degree prior to 2014 can be possibly be explained as these individuals taught other content areas prior to teaching agriculture or were alternatively certified after working in industry. The majority of respondents (80%) noted they completed their bachelor's degree at the University of Wisconsin-Platteville (28.60%) and the University of Wisconsin-River Falls (51.40%), the only two universities with agricultural education teacher preparation programs in Wisconsin.

The route to attaining a teaching license a traditional teacher preparation program as part of a bachelor’s degree program was the most prevalent with 71.40% of respondents. This represents the main certification pathway in the state of Wisconsin. Another option for a traditional teacher preparation program is going through a graduate program which ends in licensure or a master’s degree. No respondents indicated it was the route they completed to become certified to teach. Seven respondents overall indicated they completed an alternative teacher preparation program with 57% finishing the program before being hired by a school district and 43% concluding the program after being hired. The idea of completing the alternative certification program prior to entering the classroom conflicts with the definition provided by
Constatine et al. (2009) with alternative route programs occurring after the individual began teaching. However, other definitions do not delineate when an alternative program should be completed, only the program differs from a traditional undergraduate program (Bowling & Ball, 2016; Darling-Hammond, 1990; Miller, McKenna, & McKenna, 1998; Ruhland & Bremer, 2003; Truell, 1999; Walsh & Jacobs, 2007).

According to the Wisconsin Department of Public Instruction (“WI Educator Preparation Program (EPP) Lookup,” n.d.), there are four educator preparation programs approved for agricultural education in Wisconsin. The UW-Platteville and UW-River Falls program type are considered public universities and the CESA 6 RITE program and the Project Teaching eduCATE program fall under alternative route programs. No respondents indicated they completed the CESA 6 program, but three worked with Project Teaching. Two respondents completed their licensure through the Milwaukee Teacher Education Center and UW-River Falls STEMteach program, neither being explicitly approved for agricultural education. More research should be completed to identify license type of alternative route program completers to understand their backgrounds, as well as other licenses they hold.

Three individuals indicated they had earned an experience-based license. This is the newest option for attaining a teaching license in Wisconsin. In the spring of 2016, Wisconsin governor, Scott Walker, signed Senate Bill 449 into law allowing for individuals who have occupational experience, pedagogical training, and a district intent on hiring them to teach a vocational subject (agriculture, business education, family and consumer education, technical education) to be granted a teaching license (“Experience-based Technical and Vocational Education Subjects Pathway,” 2015; Kulow, 2016).
Out of the eight respondents who indicated they had a teaching license in an additional area before adding an agriculture license, the majority (75%) had a science-type license. This could be reflective of the connection being promoted in agricultural education between agriculture and science. There were also individuals who held licenses in German, Spanish, physical education, and health. The question arises regarding their knowledge of agricultural education and the three-circle model. This study did not explore the previous teaching experience of these individuals, only whether they went through a traditional or alternative route for teacher preparation. More research should be done on this population to identify reasons for adding an agriculture license and success in teaching agriculture.

Overall, the majority of respondents indicated they planned to be a teacher as an undergraduate student (71.4%), which represents 24 of the 25 traditional route teachers. Alternative route teachers indicated drastically different reasons for choosing the specific route for a teaching license. Choosing a route which allowed individuals to work full-time, was conveniently located, and complete coursework and training which fits their schedule resonates with literature on alternative certification and routes to teaching. To fill the need of agriculture teachers in local school districts, it is critical we do not discount alternative routes and especially the reasons why individuals choose them.

A criticism of alternative routes to licensing are the lack of training and preparation, including student teaching. Darling-Hammond and Bransford (2005) note one of the most common and meaningful pedagogical practices in teacher education is the student teaching experience. Respondents were asked to report if they had participated in a student or practice teaching experience. The majority of respondents (82.9%) confirmed they had participated in such an experience, which was at least 10-weeks long. All of the traditional route teachers had
participated in student teaching, which is not surprising considering student teaching is an integral part of the traditional teaching preparation program. It is important to note 40% of alternative route respondents had completed such an experience before being hired as a teacher, indicating the alternate route programs are providing such an experience. More research should be completed to explore program requirements and the success levels of alternative route student teaching experiences.

Objective 3.

True to Sorensen’s (2015) findings on turnover intentions, the respondents had moderately low turnover intention ($M = 2.95, SD = 1.13$), which also echoes other findings in agricultural education (Crutchfield, Ritz, & Burris, 2013). While the difference in turnover intentions was not statistically significant, it should be noted the respondents who were in the alternative route group had a slightly higher turnover intention than their traditional route counterparts. This study should be replicated on a larger scale to research if the route of teacher preparation impacts turnover intentions. Turnover intentions for individual respondents were from 1.63 to 5 indicating a spread of scores, as well as respondents who indicated they were likely to leave the profession. There have been multiple studies completed in agricultural education on why individuals are exiting the classroom (Clark et al., 2014; Lemons et al., 2015). Understanding the reasons why individuals have high turnover intention and understanding themes in agricultural teacher attrition can help the profession focus on preparation and retention strategies, including mentoring.

Recommendations for Further Research
There have not yet been definitive results regarding the differences between teachers prepared through traditional and alternative routes of teacher preparation. As the agricultural education faces teacher shortages (Smith et al., 2017), we will see more teachers enter the classroom prepared through alternative routes. While there have been studies exploring alternatively certified agricultural teacher’s self- and teaching-efficacy (Duncan & Ricketts, 2008; Roberts & Dyer, 2004; S. Robinson & Edwards, 2012; Rocca & Washburn, 2006) there are still gaps in the literature regarding alternative routes to certification in agricultural education and career and technical education.

This study has provided several recommendations for further research. Due to the varying requirements of traditional and alternative routes to certification, research should be completed to identify both traditional and alternative programs, as well as required coursework, field experiences, and other requirements. Comparisons between states would be difficult due to the differences in teacher licensure requirements. However, nationally it would provide a picture of the requirements by states and preparation of teachers.

In Wisconsin, research should be conducted regarding the new experience-based license, including the previous experiences of the educators, their capability in the classroom, as well as the success of the licensure program. Understanding the reasons why these individuals are choosing to enter the classroom is important for recruitment and retention efforts. This understanding is also important for alternative route individuals. This research could provide insight into how to recruit mid-career individuals or recent college graduates with an agriculture background into the agricultural education profession.

More research should be completed on how alternative route agriculture teachers are being supported by state agricultural education leadership, potentially from state departments of
education, state FFA associations, and state agriculture teachers’ associations. Research should be completed on how alternative route individuals are educated about agricultural education and the three-circle model.

There are still questions on whether alternative route teachers are successful. Additional research should be completed on classroom teaching, as well as program management of alternative route teachers. Previous studies have indicated alternatively certified teachers do may not realize what they do not know regarding teaching (Roberts & Dyer, 2004), research should be conducted to identify what alternative route teachers know or are not aware of to be a successful educator.
References


Project Teaching Program. (2015, August 10). Retrieved from https://www.educate-wi.com/content/programs/project-teaching


APPENDICES
Appendix A

First Email Contact

Dear ${m://FirstName},

The Oregon State University Department of Agricultural Education and Agricultural Sciences is seeking Wisconsin agriculture teachers who have less than three years of experience teaching secondary agriculture to participate in a thesis study. The purpose of this study is to examine routes of certification and turnover intentions of Wisconsin agriculture teachers with less than three years of experience.

Your input will provide valuable information for early career agriculture teachers in Wisconsin.

All that is required for your participation in this study is an online survey that will take approximately 15 minutes.

Access the link for the study here, ${l://SurveyLink?d=take the survey}.

For more information about this study, please contact the student researcher, Kellie Claflin, by phone at 541-737-2661 or email at kellie.claflin@oregonstate.edu.

Thank you,

Kellie Claflin
Student Researcher

Study Title: Routes to Certification and Turnover Intentions of Induction Level Wisconsin Agriculture Teachers

Principal investigator: Dr. Misty Lambert, misty.lambert@oregonstate.edu
Appendix B

Second Email Contact

Dear ${m://FirstName},

You recently received an email regarding your participation in a survey about early career agriculture teachers in Wisconsin. It is not too late to provide valuable information to help support agriculture teachers in the first three years of teaching agriculture.

The purpose of this study is to examine routes of certification and turnover intentions of Wisconsin agriculture teachers with less than three years of experience.

All that is required for your participation in this study is an online survey that will take approximately 15 minutes.

Access the link for the study here, ${l://SurveyLink?d=take the survey}.

For more information about this study, please contact the student researcher, Kellie Claflin, by phone at 541-737-2661 or email at kellie.claflin@oregonstate.edu.

Thank you,

Kellie Claflin
Student Researcher

Study Title: Routes to Certification and Turnover Intentions of Induction Level Wisconsin Agriculture Teachers

Principal investigator: Dr. Misty Lambert, misty.lambert@oregonstate.edu
Appendix C

Third Email Contact

Dear ${m://FirstName},

Your response has not yet been received regarding Wisconsin agriculture teachers in their first three years of teaching agriculture. It is not too late to provide valuable information to help support agriculture teachers in the first three years of teaching agriculture.

The purpose of this study is to examine routes of certification and turnover intentions of Wisconsin agriculture teachers with less than three years of experience.

All that is required for your participation in this study is an online survey that will take approximately 15 minutes.

Access the link for the study here, ${l://SurveyLink?d=take the survey}.

For more information about this study, please contact the student researcher, Kellie Claflin, by phone at 541-737-2661 or email at kellie.claflin@oregonstate.edu.

Thank you,

Kellie Claflin
Student Researcher

Study Title: Routes to Certification and Turnover Intentions of Induction Level Wisconsin Agriculture Teachers

Principal investigator: Dr. Misty Lambert, misty.lambert@oregonstate.edu
Appendix D

Final Email Contact

Hi ${m://FirstName},

There is still time for you to provide valuable information to help support agriculture teachers in the first three years of teaching agriculture, as well as be instrumental in the completion of a master's degree program. The survey will end at the end of the day tomorrow.

Participation in this study is voluntary. The survey takes approximately 5 minutes to complete.

The purpose of this study is to examine routes of certification and turnover intentions of Wisconsin agriculture teachers with less than three years of experience.

Access the link for the study here, ${l://SurveyLink?d=take the survey}.

For more information about this study, please contact the student researcher, Kellie Claflin, by phone at 541-737-2661 or email at kellie.claflin@oregonstate.edu.

Thank you,

Kellie Claflin
Student Researcher

Study Title: Routes to Certification and Turnover Intentions of Induction Level Wisconsin Agriculture Teachers

Principal investigator: Dr. Misty Lambert, misty.lambert@oregonstate.edu
Appendix E

Survey Instrument

WI: Routes to Certification and Turnover Intentions of Induction Level Wisconsin Agriculture Teacher

Welcome! Purpose: The purpose of this research study is to identify demographics, routes to certification, and turnover intentions of Wisconsin agriculture teachers who have fewer than three years of experience teaching secondary agriculture. You are being asked to take part in this study because you have been identified as a Wisconsin agriculture teacher who has fewer than three years of experience teaching secondary agriculture. Activities: The study activities include an online survey that will identify demographic information, educational background, teacher certification information, and intention to stay in the teaching profession. Time: Your participation will take approximately 15 minutes. Confidentiality: We are publishing aggregate data only. The information that you provide will be kept confidential to the extent permitted by law. Voluntary: Participation in this study is voluntary. You may skip any questions you are not comfortable answering. Contact information: If you have any questions about this research project, please contact: Kellie Claflin, Graduate Teaching Assistant in Agricultural Education and Agricultural Sciences at Oregon State University. Kellie.claflin@oregonstate.edu, 541-737-2661 or Dr. Misty Lambert, Associate Professor at misty.lambert@oregonstate.edu. If you have questions about your rights or welfare as a participant, please contact the Oregon State University Human Research Protection Program (HRPP) office, at (541) 737-8008 or by email at IRB@oregonstate.edu. If you agree to participate in this study, please acknowledge by clicking the “Next” button at the bottom of the page. This will take you directly to the survey questions.
The purpose of this research study is to identify demographics, routes to certification, and turnover intentions of agricultural education teachers in Wisconsin in their first through the third year of teaching agriculture. The survey consists of three sections: the path to teacher certification, turnover intentions, and demographics.

Q3 What is your highest level of education completed?
- High School/GED (1)
- Associate's Degree (2)
- Bachelor's Degree (3)
- Master's Degree (4)
- Doctoral Degree or other professional degrees (5)

  Condition: Doctoral Degree or other professional degrees Is Selected. Skip To: What year did you complete your doctoral degree or other professional degree?

  Condition: Master's Degree Is Selected. Skip To: What year did you complete your master's degree?

  Condition: Bachelor's Degree Is Selected. Skip To: What year did you complete your bachelor's degree?

  Condition: High School/GED Is Selected. Skip To: Which of the following statements bes....

Condition: Associate's Degree Is Selected. Skip To: Which of the following statements bes....

Q4 What year did you complete your doctoral degree or other professional degree?

Q5 What was the name of the college or university where you completed your doctoral degree or other professional degree?

Q6 What were your field(s) of study for your doctoral degree or other professional degree?
- Major field(s) of study: (1) _________________
- Minor field(s) of study: (2) _________________

  Condition: What were your field(s) of study Is Greater Than or Equal to 1. Skip To: What year did you complete your master's degree?

Q7 What year did you complete your master's degree?

Q8 What was the name of the college or university where you completed your master's degree?

Q9 What were your field(s) of study for your master's degree?
- Major field(s) of study: (1) _________________
- Minor field(s) of study: (2) _________________

  Condition: What were your field(s) of study Is Greater Than or Equal to 1. Skip To: What year did you complete your bachelor's degree?

Q10 What year did you complete your bachelor's degree?

Q11 What was the name of the college or university where you completed your bachelor's degree?
Q38 Which of the following statements best describes how you earned your teaching license?
- A traditional teacher preparation program as part of a bachelor's degree (1)
- A traditional teacher preparation program as part of a master's degree/licensure program (2)
- An alternative teacher preparation program completed after being hired as a teacher (3)
- Experience-based license pathway (4)
- Other (Please describe) (5) ____________________

Condition: An alternative teacher preparation program selected. Skip to: What is the name of the alternative teacher preparation program?

Condition: A traditional teacher preparation program selected. Skip to: Please indicate any existing licenses held prior to agriculture.

Condition: Experience-based license pathway selected. Skip to: Please indicate any existing licenses held prior to agriculture.

Condition: Other (Please describe) selected. Skip to: Please indicate any existing licenses held prior to agriculture.

Q39 What is the name of the alternative teacher preparation program?

Q26 Did you add an agriculture license to an existing license?
- Yes (Please list existing licenses held prior to agriculture.) (1) ____________________
- No (2)
Q27 Why did you choose to get a teaching license? (Mark all that apply.)
☐ As an undergraduate, I planned to be a teacher and so took all necessary courses to become certified. (1)
☐ As an undergraduate, I planned to teach but did not want to take the necessary courses to become certified. (2)
☐ As an undergraduate, I didn't have plans to teach. (3)
☐ As an undergraduate, I was intent on pursuing a specific, non-teaching career. (4)
☐ I pursued teaching as part of my master's studies. (5)
☐ I chose a route to becoming a certified teacher that required coursework and training that fits my schedule. (6)
☐ I chose a route to becoming a certified teacher based on a program that was conveniently located. (7)
☐ I chose a route to becoming a certified teacher based on financial considerations. (8)
☐ I chose a route to becoming a certified teacher based on the requirements of the school, district, or state in which I wanted to teach. (9)
☐ I chose a route to becoming a certified teacher that would allow me to become certified while working full-time. (10)
☐ Other reason (Please specify) (11) ____________________
Q28 Before beginning your first teaching position, did you complete any student/practice teaching that was part of your teacher preparation program?

- Yes (1)
- No (2)

If Yes Is Selected, Then Skip To How long did your student/practice teaching last? If No Is Selected, Then Skip To End of Block

Q29 How long did your student/practice teaching last?

- 5 weeks or less (1)
- 6-9 weeks (2)
- 10 weeks or more (3)
Q30 Please indicate your level of agreement for each statement by clicking the corresponding bubble.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree (1)</th>
<th>Disagree (2)</th>
<th>Somewhat Disagree (3)</th>
<th>Somewhat Agree (4)</th>
<th>Agree (5)</th>
<th>Strongly Agree (6)</th>
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</thead>
<tbody>
<tr>
<td>If I could get another job different from being an agriculture teacher, I would take it. (1)</td>
<td>〇</td>
<td>〇</td>
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<tr>
<td>I plan to leave teaching agriculture sometime before I am eligible to retire. (2)</td>
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<tr>
<td>I am preparing to take advantage of the right opportunity to leave my position as a agriculture teacher. (3)</td>
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<tr>
<td>I plan to leave my job as a agriculture teacher as soon as I am able. (4)</td>
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<tr>
<td>I plan to remain teaching agriculture until I am physically no longer able to teach. (5)</td>
<td>〇</td>
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</tr>
</tbody>
</table>
I plan to remain teaching agriculture until I am able to retire. (6)

It would take a unique set of circumstances for me to leave my position as an agriculture teacher. (7)

I do not plan to leave my job as an agriculture teacher. (8)

Q31 What is your age in years?

Q32 What is your sex?
- Male (1)
- Female (2)

Q33 What best describes your racial/ethnic identity?
- White, European American, Non-Hispanic (1)
- Asian or Asian American (2)
- Black, African American, Non-Hispanic (3)
- Middle Eastern or Middle Eastern American (4)
- North African or North African American (5)
- Pacific Islander (6)
- Hispanic or Latino American (7)
- American Indian or Alaskan Native (8)
- Other (Please specify) (9) ____________________
- Decline to respond (10)

Q34 Including the current year, how many years have you been employed as an agriculture teacher? (Please use a whole number)
Q35 Which of the following best describes the location of the school where you teach?
- Urban (1)
- Suburban (2)
- Rural (3)

Q36 Please select the statement that best describes your work situation?
- I have a full-time teaching assignment (1)
- I have a full-time teaching assignment which consists of teaching courses that are not considered part of agriculture (license/certification) (2)
- I do not have a full-time teaching assignment (e.g. part-time) (3)
Appendix F

IRB Documentation

Research Protocol
Lambert 03092017

1. Protocol Title: Routes to Certification and Turnover Intentions of Induction Level Wisconsin Agriculture Teachers

PERSONNEL

2. Principal Investigator: Misty Lambert
3. Student Researcher(s) Kellie Claflin
4. Co-investigator(s) n/a
5. Study Staff n/a
6. Investigator Qualifications
   The PI holds a PhD in Agricultural Education, is a current teacher educator, and has extensive experience in quantitative and qualitative methods. The student researcher is a master’s student completing a thesis in agricultural education. The student researcher is a graduate teaching assistant in the Department of Agricultural Education and Agricultural Sciences and taught career and technical education at the high school level. Both researchers have completed CITI ethics training.

7. Training and Oversight
   All questions, research methods, and data analysis will be conducted by the student researcher under direct supervision of the PI. The PI will ensure the student researcher follows the IRB protocol and that all ethical, legal, and professional criteria are followed. The student has completed CITI training and is aware of ethical principles in human research, including confidentiality, tracking, and data collection. The PI will be available throughout the period of data collection, analysis, or submission.

8. Conflict of Interest
   No members of the study team, or any of their family members, have a financial or other business interest in the source(s) of funding, materials, or equipment related to this research study.

FUNDING

9. Sources of Support for this project (unfunded, pending, or awarded)
   Study is unfunded.

DESCRIPTION OF RESEARCH

10. Description of Research
   This purpose of this study is to discover the demographics, routes of certification and turnover intentions of Wisconsin agricultural education teachers with less than 3 years of teaching. Turnover intentions will be analyzed by the route of certification. The data will be used to inform teacher preparation and professional development, as well as disseminated in conference presentations and teacher education-focused journals. Research objectives are listed below:
1. What are the demographic characteristics of Wisconsin agriculture teachers with less than three years of experience teaching agriculture?
2. What are the routes to certification and teacher preparation of Wisconsin agriculture teachers with less than three years of experience teaching agriculture?
3. What are the turnover intentions and how do they differ by routes to certification for Wisconsin agriculture teachers with less than three years of experience teaching agriculture?
4. What is the relationship between turnover intentions and routes to certification for Wisconsin agriculture teachers with less than three years of experience teaching agriculture?

11. Background Justification

Education is facing shortages of qualified teachers in all areas (Bowling & Ball, 2016). There have been multiple types of certification developed to ensure that qualified teachers are in the classroom, with differing levels of preparation. Bowling and Ball (2016) discussed the specifics of alternative certification in career and technical education (CTE). Research is lacking in this area. New licensing options in Wisconsin provide more options for alternatively certified teachers. There isn’t information on teacher backgrounds or how they received their certification to be able to provide targeted resources. Teacher attrition is also a serious concern (National Center for Education Statistics, 2015) and by identifying teacher turnover intentions, supports and resources can be provided to keep teachers in the classroom.

12. Multi-center Study

OSU is the only institution conducting this study.

13. External Research or Recruitment Site(s)

Permission from the Wisconsin Association of Agricultural Educators was granted to access the contact information for study participants that met the eligibility requirements for the study.

14. Subject Population

- A description of participant characteristics: The target population is Wisconsin agriculture teachers who have less than three years of experience teaching secondary agriculture.
- Description of any vulnerable population(s): There are no known vulnerable populations within this study. Pregnant women may be included but are not at any increased risk through completing the survey.
- Inclusion and exclusion criteria: The inclusion criteria is that the respondents are secondary agriculture teachers in Wisconsin who have less than three years of experience teaching agriculture as identified by the Wisconsin Association of Agricultural Educators. They will be contacted by email and invited to voluntarily participate in the study. All participants will be 18 years or older and English speaking.
- Recruitment: Email addresses that have been obtained for the frame are Wisconsin agriculture teachers who have less than three years of experience teaching secondary agriculture. The target population is a census; therefore, all will be invited to participate.

The survey will be sent via email.

A copy of the recruitment email is included in the submitted materials.
15. Consent Process
When accessing the survey instrument from the email link, participants will encounter the consent document (included in the submitted materials) as the opening screen in Qualtrics. Participants will have to agree in order to move forward with the question in the survey. Their agreement will serve as a virtual signature if they agree and will opt them out of follow-up contacts if they do not agree. There will be information on the consent page with contact information including email and phone numbers of the researchers to have any questions answered. There is no concerns of non-English speakers, diminished capacity, and/or children as all participants are currently middle and high school teachers.

16. Assent Process

N/A

17. Eligibility Screening

There will not be a screening process, as all individuals who receive an email have been pre-screened and deemed as fitting the requirements.

18. Methods and Procedures

- The recruitment email (included in submitted materials) will be sent to Wisconsin agriculture teachers who have less than three years of experience teaching secondary agriculture. All teachers in the population will be invited to participate as the target population is a census of teachers. The available frame will be imported into Qualtrics for delivery by email.
- The consent document (included in submitted materials) will be the first page in Qualtrics.
- Kellie Claflin will respond to all questions that arise from the consent page.
- After four days, a reminder email with another link to the survey will be sent to non-respondents, as identified in Qualtrics. The follow-up email for non-respondents is included in submitted materials. The link will take individuals to the consent document to opt in to the survey.
- After two weeks from the original email, a reminder email with another link to the survey will be sent to non-respondents, as identified in Qualtrics. The second follow-up email for non-respondents is included in submitted materials. The link will take individuals to the consent document to opt in to the survey.
- Data will be imported into SPSS, where identifying email addresses will be removed. SPSS will be utilized to complete data analysis. Descriptive and correlational statistics will be used to describe variables and explore relationships among variables.
- Aggregated data will be shared in Kellie Claflin’s master’s thesis, presentations at teacher education conferences and journal publications.

19. Compensation

None

20. Costs

None

21. Anonymity or Confidentiality
• While there is a chance information may be disclosed, data will be confidential. In order to follow up with non-respondents, data will be linked with emails throughout the duration of data collection (and will remain this way within the Qualtrics system). The data that will be stored on OSU servers will have identifiers removed. Access to data in Qualtrics is secured with password protection. Computer storing and accessing the data will have fully patched operating systems and applications. A plan for routine back-ups is in place. Confidentiality will be maintained to the extent permitted by the technology used.

• Data will be stored by PI in electronic forms on both Qualtrics accounts and on their work computers for three years post-study termination. The data will be identified by email addresses within Qualtrics (to allow for non-respondent follow-up), but data stored locally will have identifiers removed. University computers utilized are password protected and have current anti-virus software.

• No one outside the researchers will see individual data samples, only aggregated data representing the group in Kellie Claflin’s thesis, research presentations and publications. The manuscript will be submitted to the OSU Scholars Archive.

22. Risks

There are no known risks.

23. Benefits

No known benefits to participants. The data will inform teacher preparation and professional development.


There are no known risks of participating in this research study. The data will inform teacher preparation and professional development.
Appendix G

IRB Exemption

HUMAN RESEARCH PROTECTION PROGRAM
Institutional Review Board
Office of Research Integrity
Biomedical Research Administration Building, Corvallis, Oregon 97331-2110
(541) 737-8003
IRB@oregonstate.edu | http://research.oregonstate.edu/irb

<table>
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Principal Investigator: Misty Lambert
Study Title: Routes to Certification and Turnover Intentions of Induction Level Wisconsin Agriculture Teachers
Study Team Members: Kellie Clafin
Review Level: Exempt
 Submission Type: Initial Application
Funding Source: None
Proposal #: N/A
Cayuse #: N/A

The above referenced study was reviewed by the OSU Human Research Protection Program (HRPP) office and determined to be exempt from full board review.

**EXPIRATION DATE: 03/08/2022**

The exemption is valid for 5 years from the date of approval.

Annual renewals are not required. If the research extends beyond the expiration date, the investigator must request a new exemption. Investigators should submit a final report to the HRPP office if the project is completed prior to the 5 year term.

Comments:

Please note when applicable, if the PI has not already done so, the HRPP staff will update the version date on the protocol and consent document(s).

**Principal Investigator responsibilities:**

- Certain amendments to this study must be submitted to the HRPP office for review prior to initiating the change. These amendments may include, but are not limited to, changes in funding, study population, study instruments, consent documents, recruitment material, sites of research, etc. For more information about the types of changes that require submission of a project revision to the HRPP office, please see:
  [http://oregonstate.edu/research/rb/sites/default/files/website_guidancedocuments.pdf](http://oregonstate.edu/research/rb/sites/default/files/website_guidancedocuments.pdf)
- All study team members should be kept informed of the status of the research. The Principal Investigator is responsible for ensuring that all study team members have completed the online ethics training requirement, even if they do not need to be added to the study team via project revision.
- Reports of unanticipated problems involving risks to participants or others must be submitted to the HRPP office within three calendar days.
- The Principal Investigator is required to securely store all study related documents on the OSU campus for a minimum of three years post study termination.