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Preservice Agricultural Education Teachers and Secondary Education Teachers' Self-Efficacy and Professional Identity

A thesis submitted in partial fulfillment
of the requirements for the degree of
Masters of Science in Agricultural and Extension Education

by

Hailey R. Gates
Tennessee Technological University
Bachelor of Science in Agriculture, 2012

May 2018
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This thesis is approved for recommendation to the Graduate Council.

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Abstract

During the nineteenth century, a decision was made to separate the preparation of agricultural education teachers from their elementary and secondary counterparts (Hearings, 1908; Heren & Hillison, 1996; Hillison, 1986). The majority of land-grant universities and colleges have continued to prepare agricultural education preservice teachers within the college of agriculture, separate from other secondary education preservice teachers in the college of education (Myers & Dyer, 2004). Despite the differences among content disciplines, teachers who possess a strong sense of self-efficacy and professional identity have higher success rates in the classroom when it comes to collaboration, involvement, and student achievement (Ashton & Webb, 1986; Bandura, 1997; Dembo & Gibson, 1985; O'Bryant, 1992; Putman, 2012; Skaalvik & Skaalvik, 2008; Tschannen-Moran & Woolfolk Hoy, 2001White, 2009; Woolfolk, Rosoff, & Hoy, 1990). Therefore, the purpose of this study was to describe the self-efficacy and professional identity of preservice agricultural education teachers and other secondary education preservice teachers.

Data were collected from land-grant universities and colleges through either electronic or paper surveys. Respondents (N = 85) from 13 institutions included both agricultural education preservice teachers (n = 68) and other secondary education preservice teachers (n = 17). The instrument used in this study was a modified questionnaire that combined two previously established scales, Tschannen-Moran and Woolfolk Hoy's (2001) Teacher's Sense of Efficacy Scale and Woo's (2013) Professional Identity Scale in Counseling. Descriptive statistics revealed that agricultural education preservice teachers' possessed a slightly higher level of self-efficacy than other secondary education preservice teachers. Conversely, secondary education preservice teachers possessed a slightly higher level of professional identity than agricultural education

preservice teachers. A Pearson's Correlation was used to reveal a negligible relationship between self-efficacy and professional identity among agricultural education preservice teachers. However, there was a small relationship between self-efficacy and professional identity among secondary education preservice teachers. Further research should be conducted to establish the development of self-efficacy and professional identity throughout the teacher career cycle through longitudinal studies. Additionally, the literature suggest a relationship between self-efficacy and professional identity, but more research is recommended to empirically prove and generalize this to all preservice teachers.

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Dedication

This thesis is dedicated to Linda Sweat, lovingly known as Cuckoo Nana, who passed away during the fall semester of 2016. I had really looked forward to living in the same state as you and was excited to reconnect with you in this adult chapter of my life. The few weekends I spent with you in Hot Springs and the conversations we had have continued to comfort and encourage me during my time in Arkansas. Thank you for seeing me as the woman I am today and for helping me believe in my abilities. I hope when others see me, they can see the strength that you possessed in times of uncertainty and the love and loyalty that you devoted to your family. I hope that you and Cuckoo Papa are proud of the person I have become and continue to watch over me and my brother from Heaven. And I hope that you know how much I love you and valued our time spent together here on earth.

I also want to dedicate this to my brother, Dalton Gates, who has been my friend, encourager, and confidant. Despite distance and our increasingly busy lives, we have grown closer over the years and I couldn't be more proud of the man you have become. I hope you continue to find passion in your work and diligently serve others with your God given talents. I hope you know that what you do is incredibly important and your impact goes far beyond what you can see. And I hope you never grow tired of chasing your dream of trying to out-do me. You make us all so proud and I can't wait to see what great things you accomplish.

Perhaps this is the moment for which you have been created.

Esther 4:14

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Introduction

Background

Over a century ago, leaders in the agricultural industry made a decision that has impacted generations of agricultural education teachers. At the time, the question arose as to where preservice agricultural teachers would be prepared (Heren & Hillison, 1996). Hillison (1986) described a force that arose in opposition to having agricultural education teachers prepared in normal schools due to their lack of understanding of the agricultural industry. Agricultural leaders at the time were quite critical of normal school preparation; E.E. Balcomb (1912) stated:

> "…but behold the lack of equipment and the infantile efforts of the vast majority of normal schools. They have four brick walls, the common desks, children saturated with the old ideas of education, a textbook written by a college professor who never taught a day in the rural schools, and a teacher who does not know a Duroc from a Plymouth Rock." (p. 828)

A.C. True, Director of the USDA's Office of Experiment Stations, and A.B. Graham, USDA's Chief of Agricultural Extension and founder of the 4-H youth organization, agreed with this viewpoint and helped ensure that preservice agricultural education teachers would come to be prepared at land-grant universities (Hearings, 1908). This decision resulted in the separation of agricultural education preservice teachers from their secondary and elementary education counterparts. Land-grant universities and colleges, historically founded as institution for agricultural and mechanical education, assumed the role of teacher preparation for their agricultural education students. Today, while agricultural education teachers can be prepared at institutions of all different standings, agricultural education teacher preparation programs are primarily found in the colleges of agriculture, separate from the colleges of education (Myers & Dyer, 2004).

Problem Statement

Over the decades, the American education system has evolved to integrate core content and career technical education (CTE) through the implementation of science, technology, engineering, and mathematics (STEM) education (Stone, 2011). This merger has resulted in a desire for interdisciplinary involvement amongst teachers, promising greater comprehensive learning and cooperative design (Crow & Pounder, 2000; Pounder, 1999). This trend encourages agricultural education teachers to work closely with their core content teaching peers. However, agricultural education teachers see themselves as different, having a strong kinship toward their agricultural subject matter, other agricultural educators, and agricultural industry professionals (Herren & Hillison, 1996).

Despite the exodus of many agricultural education departments from colleges of education, the need for prepared and professional teachers is still recommended by the American Association for Agricultural Education in their most recent publication of the American Association for Agricultural Education National Research Agenda (Roberts, Harder, & Brashears, 2016). This preparation starts with the formal education they receive as preservice teachers in a teacher education program. Thoron, Myers, and Barrick (2016) stated, “for nearly a century, teacher preparation has been an integral part of university–based agricultural education programs” (p. 44). The same emphasis on the need for research in teacher education programs is echoed by American Education Research Association (AERA) research priority topic nine, “Research on Teacher Education Programs” (Cochran-Smith & Zeichner, 2009), that recommended researchers explore the impact of teacher education programs and the outcome and connection it has to the classroom.

Need for the Study

The American Association of Colleges for Teacher Education (AACTE) recognizes over 800 postsecondary institutions that offer teacher education programs within colleges, schools, or departments of education (AACTE, 2017). Unlike programs that offer alternative teaching certifications, teacher education programs require student-teaching experiences among other formal training in order to prepare the preservice teacher for a successful transition into the classroom (Guyton, Fox, & Sisk, 1991). Coursework required by preservice teachers within the college of education includes a diverse curriculum which encompasses the learning process, classroom management and discipline, curriculum development, the use of instructional technology, preparation in multicultural education, school law and finance, and use of instructional materials and classroom teaching techniques (Morey, Bezuk, Chiero, 1997). This results in a strong emphasis on pedagogy.

Conversely, preservice agricultural education degree programs are traditionally housed within colleges, schools, and departments of agriculture and include a wide range of agricultural faculty and specialists (Myers & Dyer, 2004). Myers and Dyer (2004) explained that an agricultural education degree program at a four-year institution requires an average of 130.5 hours of course work which breaks down to 44.7 hours of required general studies, 42.8 hours of technical agriculture courses, and 35.8 hours of professional education coursework. This approach reduces the amount of pedagogical studies. While the agricultural focus has been warranted, recent shifts in agricultural education have illustrated a need to integrate more STEM education and interdisciplinary curriculum into school-based agricultural programs (Haugh, 2011). This has led to recommendations for research to identify the best methods that teacher

educators can employ to prepare agricultural education teachers for this expanded role (Myers & Dyer, 2004).

Hall and Weaver (2001) warned against increasing specialization in the educational field, as it could hinder interdisciplinary exchange. This idea of educational collaboration is encouraged among beginning teachers, including preservice teachers, of all disciplines (Kaufman & Brooks, 1996). The confidence and ability to collaborate has been connected to a teacher's sense of self-efficacy (Tschannen-Moran & Woolfolk Hoy, 2001). Additionally, studies have reported higher levels of teacher commitment and performance, as well as student learning, as a result of teachers' developing a strong sense of professional identity (Carnegie & Forum, 1986; Conley & Cooper, 1991; Darling-Hammond 1984; Darling-Hammond 1995; Holmes Group 1986; Rosenholtz, 1989; Sergiovanni & Moore 1989; Talbert & McLaughlin, 1993). Similarly, teachers' belief in their self-efficacy has been reported to influence their ability to collaborate, implement instruction, and engage students (Ashton & Webb, 1986; Bandura, 1997; Dembo & Gibson, 1985; Tschannen-Moran & Woolfolk Hoy, 2001; Woolfolk, Rosoff, & Hoy, 1990). Teachers possessing a strong sense of self-efficacy and professional identity are more likely to experience success in the classroom (Ashton & Webb, 1986; Bandura, 1997; Dembo & Gibson, 1985; O'Bryant, 1992; Putman, 2012; Skaalvik & Skaalvik, 2008; White, 2009; Woolfolk, Rosoff, & Hoy, 1990).

Significance of the Study

As a result of the unique relationships and roles associated with agricultural education teachers (Terry & Briers, 2010), their preservice preparation has been separated from their secondary education counterparts despite having similarly intended outcomes. Due to a lack of comparative research of agricultural education preservice teachers to traditional secondary

education preservice teachers, this study acts as a starting point for exploring the differences that may possibly exist between the two groups regarding their development of professional identity and self-efficacy.

Purpose and Objectives

The purpose of this study was to describe the self-efficacy and professional identity of preservice agricultural education teachers and other secondary education preservice teachers. The following objectives guided the study:

1. To describe the self-efficacy of agricultural education preservice teachers and other secondary education preservice teachers.
2. To describe the professional identity of agricultural education preservice teachers and other secondary education preservice teachers.
3. To describe the relationship between agricultural education preservice teachers' self-efficacy and professional identity.
4. To describe the relationship between other secondary education preservice teachers' self-efficacy and professional identity.

Assumptions and Limitations

For this quantitative study, it is assumed that all respondents who completed the survey answered the questions truthfully. Additionally, it is assumed that all respondents were surveyed prior to students teaching, indicating that they had completed approximately 80% of their required degree coursework. The differences in sample size ($N = 85$) is a limitation when comparing agricultural education ($n = 68$) and other secondary education majors ($n = 17$), as

secondary education respondents only made up 20% of the sample population. Due to the sampling framework, this study is limited only to the respondents who participated and is not generalizable to all institutions with teacher education programs

Definitions

Agricultural Education- "A systematic program of instruction available to students desiring to learn about the science, business, technology of plant and animal production and/or about the environmental and natural resources systems" (National FFA Organization, 2015, para 3). Agricultural education programs are taught by certified and licensed agricultural education teachers.

Constructivist Theory - A theoretical approach to learning that emphasizes the active role that a learner takes in building and making sense of information (Woolfolk, 2016). This educational theory posits that learners construct their knowledge from the information around them.

Discipline - A branch of learning or knowledge; a field of study or expertise; a subject (Oxford English Dictionary, 2017). A content focus or discipline in secondary education refers to the type of educational subject being taught; some examples include agricultural education, math, science, history, music, or English.

Pedagogical Content Knowledge - "The knowledge teachers need to represent and impart subject matter to students" (Morey et al., 1997, p. 8). Teachers are expected to maintain an appropriate level of pedagogical content knowledge which allows them to successfully work with students.

Preservice Teacher - Students in an undergraduate teacher education courses who have not yet completed their degree or licensure requirements (Joram & Gabriele, 1998). A student who is a

candidate for teacher certification in a teacher education program who has not yet taught as an in-service teacher in their own classroom.

Professional Identity - An individual's relationship with society and their professional community (Gibson, Dollarhide, & Moss, 2010). Professional identity refers to the way a person views themselves within their professional community. For this study, components that influence an individual's professional identity include: knowledge of the profession, philosophy of the profession, professional roles and expertise, attitude, engagement behaviors, and interactions.

Self-efficacy - The belief of one's own ability to accomplish or perform a specific task at a designated level (Bandura, 1997). Individuals with high self-efficacy are confident in their own ability to complete a given task.

School-Based Agricultural Education (SBAE) - "Formal agricultural education program offered in the public school system" (Phipps, Osborne, Dyer, & Ball, 2008, p. 537). Intracurricular agricultural education programs that are structured and implemented by the agricultural education teacher in the school setting as opposed to an extension agency or extracurricular club.

Student Teaching - A clinical field experience that develops preservice teachers' skills through experience and mentoring in a placement school environment (LePage, Darling-Hammond, Akar, Gutierrez, Jenkins-Gunn, & Rosebrock, 2005). This is a mandatory experience required by all preservice teachers for the completion of their degree program.

Teacher Efficacy- "Teacher's judgment of his or her capabilities to bring about desired outcomes of student engagement and learning" (Tschannen-Moran & Woolfolk Hoy, 2001, p.

783). High teacher efficacy results from teachers who are competent and confident in engaging, instructing, and managing their students.

Summary

Teaching in 21st century classrooms presents a number of challenges for teachers due to the pressure of increased student engagement and complexities of student interaction (Putman, 2012). Teachers who possess a strong sense of self-efficacy and professional identity have higher success rates in the classroom when it comes to collaboration, involvement, and student achievement (Ashton & Webb, 1986; Bandura, 1997; Dembo & Gibson, 1985; O'Bryant, 1992; Putman, 2012; Skaalvik & Skaalvik, 2008; Tschannen-Moran & Woolfolk Hoy; 2001White, 2009; Woolfolk, Rosoff, & Hoy, 1990). This success should be desired in all teachers, regardless of discipline. This study sought to explore the self-efficacy and professional identity of preservice teachers from different disciplinary colleges. By utilizing a quantitative approach, the two groups of preservice teachers will be examined to determine their relationships with professional identity and self-efficacy.

Chapter two includes a review of literature regarding the theoretical frameworks that guided this study, as well as a synthesis of research surrounding teacher education development, self-efficacy, and professional identity. Chapter three provides detail regarding the methodology implemented for this study, including information on the population and sample, instrument development and testing, methods and procedures, and data analysis. Chapter four presents the findings from the data analysis, while chapter five concludes with a discussion of those findings and their relevance to the literature, implications for practices, and recommendations for future research.

Literature Review

Introduction

This chapter summarizes the literature pertaining to the education and development of preservice teachers, and the impact of that development on teachers' professional identity and self-efficacy. The conceptual framework is included to help illustrate the history of the colleges of education and colleges of agriculture, their impact on the development of preservice teachers, and what studies have revealed about the importance of teacher efficacy and professional identity in both agricultural education and secondary education teachers. These concepts are presented to provide an in-depth background and context for the present study. The theoretical framework for this study provides a brief overview of Piaget's constructivist theory and the role constructivism plays in teacher education, as well as a look at the research that has been done in the development of professional identity and self-efficacy in professionals. The individual theoretical constructs have been combined to demonstrate the guiding framework for this study. The purpose of this literature review is to summarize previous research and provide an understanding and rationale for the researcher's quantitative study.

Conceptual Framework

College of Education versus College of Agriculture

History of Teacher Education. Long before the establishment of colleges of education or teacher education programs, the United States' institution of teacher training was simply referred to as normal schools. In the 18th century, these normal schools were single purpose institutions that combined the methodological study of teaching with actual classroom experiences (Morey et al., 1997). During the late 19th century, Morey et al. (1997) described a need for more rigorous curriculum as normal schools increased to two years of collegiate work

and included a focus on the preparation of high school teachers to compensate for the rapid growth and popularity of secondary schools. Shulman (1986, 1987) argued that neither the content specialist at the university nor the teacher education professor could effectively prepare preservice teachers without incorporating the fundamental pedagogical understanding of subject matter content. However, some disciplines felt differently, insisting on more of a presence from their content specialists (Herren & Hillison, 1996).

History of Agricultural Education. Much of the history narrative of agricultural education begins in 1862, when the Morrill Act established land-grant universities. These institutions were designed to focus on teaching courses in the agricultural and mechanical arts (Herren & Hillison, 1996). There was significant controversy surrounding the decision of where agricultural education teachers should be prepared (Hearings, 1908). During this time, Hillison (2010) explained, normal schools were insistent upon assuming the responsibility of training agricultural education teachers, advocating that they had the best facilities for teacher training. Bailey (1908) criticized normal schools for entertaining the idea of providing agricultural teacher education, deeming their training techniques and urban environment unfit for the preparation of agriculture teachers. In 1905, Crosby (1905) noted that of the 182 normal schools in the United States, 64 taught agricultural education.

Modern Teacher Education Programs. Today, preservice teachers of all disciplines are filtered through colleges of teacher education, which helps provide connection and coherence among institutions' preservice teachers (Darling-Hammond, Hammerness, Grossman, Rust, Shulman, 2010). The colleges of teacher education assist in developing curriculum and assessing teaching competencies, as well as assist with teacher certification and licensing (McDonald, 1973; Zeichner, 2006). Through the structure of the college of teacher education, degree

programs develop curriculum for their disciplines. Secondary education programs require general, professional, and pedagogical courses, in addition to subject matter courses related to their discipline (Darling-Hammond, Hammerness, Grossman, Rust, Shulman, 2010; Morey et al., 1997). Agricultural education programs traditionally include a variety of general education courses and technical agricultural content courses, with less emphasis on professional and pedagogical courses (Barrick & Garton, 2010; McLean & Camp, 2000; Morey et al., 1997; Swortzel, 1999). Researchers have revealed that regardless of the discipline, preservice teachers have a well-developed set of personal beliefs about learning and teaching prior to entering their teacher preparation program (Calderhead, 1991a, 1991b; Holt-Reynolds, 1992; Lonka, Joram, & Bryson, 1996; Wubbels, 1992; Zeichner & Gore, 1990).

Agricultural Education Placement

Hillison (2010) explained that over the course of the 20th century, the debate over the preparation of preservice teachers ensued, causing division among the disciplines. A survey of college agriculture professors (N = 32) conducted by True (1912) revealed mixed feelings regarding their teachers' preparation. When asked about the feasibility of cooperation between normal schools and agricultural colleges regarding teacher education, 53% felt they could and 46% felt they could not collaborate with normal schools (True, 1912). This close call resulted in favor of agricultural education preservice teachers being prepared in the colleges of agriculture, and remained that way through the 1940s (Hillison, 2010). Meanwhile, normal schools' desire to prepare all elementary and secondary preservice teachers eventually evolved into the establishment of colleges of education. From the 1950-1970s, a trend in favor of having agricultural education students prepared at these colleges of education existed, but was short lived. By the end of the 1970s, Hillison (2010) reported that those agricultural education

departments that had consolidated with the colleges of education had made the decision to return to the college of agriculture. This trend was due to pressure from the agricultural industry and stakeholders (Parr & Aldridge).

This debate spilled over from the university classroom into the pages of academic journals. In 1977, the *Journal of the American Association of Teacher Educators in Agriculture*, today known as the *Journal of Agricultural Education*, featured two authors that debated which disciplinary college should be responsible for preparing agricultural education preservice teachers. Knebel (1977) argued that the colleges of agriculture were better aligned to the vocational and occupational interests of agricultural education students, as well as better able to "relieve or reduce the degree of cultural trauma" as they transition from the university setting into the classroom or agricultural workforce (p. 7). Binkley (1977) retorted by imploring stakeholders of agricultural education to see the bigger picture, warning that the disintegration of education would likely result in a "fragmented or weak profession" (p. 4).

Parr and Aldridge (2016) continued that debate in a recent study. The researchers reported that of the 97 American institutions that offered agricultural education degree programs, 92 housed their agricultural education program within the college of agriculture. Their study evaluated Alabama's Auburn University, a land-grant university and one of the five universities that house their agricultural education programs in colleges of education. Students interviewed in this study reported that they identified as agriculturalists interested in educating young people about agriculture. Parr and Aldridge (2016) stated these participants did not once indicate they were teachers whose discipline was agriculture. This discrepancy in identity between agriculturalist and teacher is enforced by an era of teacher development that focuses around

educational-centric ideals that are inconsistent with agriculture teacher's professional identity (Shoulders & Myers, 2012).

Professional Identity

Professional identity refers to how someone perceives themselves individually, and as a part of a larger professional group (Doolittle & Camp, 1999). Keiny (1994) described an individual's subjective reality being the driving force of their professional development. So while teacher education programs strive to disseminate the same knowledge to all preservice teachers, the knowledge is internalized separately based on the individual's experience (Keiny, 1994).

The development of a strong sense of professional identity has been reported to be beneficial in other careers that are comparable to education. In studies regarding professional identity in counselors, researchers have concluded that a strong sense of professional identity is a clear indicator of success (Brott & Myers, 1992; Lafleur, 2007). Advantages of a strong professional identity in the counseling profession also included ethical performance, promoted wellness, and increased awareness (Brott & Myers, 1992; Grimmit & Paisley, 2008; Ponton & Duba, 2009). Due to the similarities of the education and training for counselors and teachers, Kagan (1988) argued that these two careers were comparable. If the same career success can be applied to the teaching profession, the establishment of teacher's professional identity during their teacher education experience can possibly reduce attrition rates among young in-service teachers (Hughes, 2012).

The development of teachers' professional identity is a transformational process that begins with an individual's self-perception of being a teacher and evolves as they are seen by others as teachers (Coldron & Smith, 1999). This transition is influenced by the preservice

teacher's degree program and curriculum design. While researchers have indicated the most drastic formation of professional identity takes place after graduation (Flores & Day, 2006; Luehmann, 2007), the development begins during preservice preparation (Walkington, 2005). Agricultural education's strong connection to agricultural colleges may have contributed to the unique internalization of their knowledge. Shoulders and Myers (2012) explained that agricultural education teachers may hold professional identities that are aligned more closely with the agricultural profession. While the development of a strong sense of professional identity is beneficial to teachers of all disciplines, an individual teacher's professional identity influences the collective identity and future of the teaching profession, as well as their ability to be a successful advocate for their teaching or disciplinary profession (O'Bryant, 1992; White, 2009). In the case of agricultural education teachers, this can be beneficial for the agricultural community, but detrimental to the increasingly interdisciplinary educational community.

Self-Efficacy

As preservice teachers shift from the university to the classroom, they are met with a new set of challenges as novice teachers. Hughes (2012) reported that between 20% and 50% of all teachers leave the classroom within the first five years of teaching. Researchers have tried to identify the reasons for teacher attrition; one emerging factor has been the teacher's sense of self-efficacy (Skaalvik & Skaalvik, 2008; Whittington, McConnell, & Knobloch, 2006). Self-efficacy was defined by Bandura (1986) as "a person's judgement of their capabilities to organize and execute courses of action required to attain designated types of performance" (p. 391).

Self-efficacy is an integral part of what influences an individual's choice of tasks, effort, and persistence (Bandura, 1986). A study by Putman (2012) revealed that self-efficacy beliefs directly affect a teacher's abilities and performance, despite variances in overall skill and effort.

Within the teaching profession, teacher efficacy has been conceptualized as a teacher's own ability to plan, organize, and execute activities required to attain an educational goal (Skaalvik & Skaalvik, 2008). Tschannen-Moran and Woolfolk Hoy (2001) defined teacher efficacy as a teacher's "judgment of his or her capabilities to bring about desired outcomes of student engagement and learning" (p. 783).

Conflicting results from research have raised the question as to what patterns in self-efficacy beliefs exist at different junctures within the career cycles of teachers (Putman, 2012). Previously, preservice teachers have been reported to view themselves as generally effective at implementing varied instructional practices and management strategies (Rimm-Kaufman & Sawyer, 2004). However, that sense of efficacy begins to decrease as the preservice teacher transitions into the full time demands and independence of an in-service teacher (Knoblauch & Hoy, 2008; Woolfolk Hoy & Spero, 2005). Chan (2008) reported that teachers at all career cycles experience high levels of efficacy when working with the most proficient students, yet preservice and new career teachers were significantly less confident and most hesitant with regards to classroom management (Chan, 2008). Putman (2012) stated that research in the area of career cycles is vitally important to ensure that teachers are demonstrating efficacy beliefs that meet the needs of today's educational climate, and can increase the retention rates of teachers in the profession.

Over the years, research on self-efficacy in teachers has revealed the importance of this construct in the classroom. Teachers of high self-efficacy are more likely to implement effective methods of instruction (Ashton & Webb, 1986; Bandura, 1997), show persistence during difficult teaching situations (Dembo & Gibson, 1985; Woolfolk, Rosoff, & Hoy, 1990), and be more successful at maintaining student engagement (Ashton & Webb, 1986). Conversely,

teachers with low self-efficacy are more likely to experience difficulties in teaching, decreased job satisfaction, and higher levels of job-related stress (Betoret, 2006; Caprara, Barbaranelli, Borgogni, & Steca, 2003; Skaalvik & Skaalvik, 2009). Additionally, a low sense of self-efficacy has been associated with non-differentiation of instruction, lack of interest in collaboration among teaching peers, and negative views toward inclusion (Soodak, Podell, & Lehman, 1998). An increased sense of self-efficacy will generally lead to increased effort, persistence, and high levels of performance, whereas poor self-efficacy may result in the tendency to give up easily and exhibit poor motivation due to a lack of confidence or self-doubt (Bandura, 1997).

Knobloch (2001) studied the impact that experiences in teacher education programs, such as field experience and peer teaching, have on the self-efficacy of agricultural education teachers. Preservice teachers reported that their personal sense of teacher efficacy increased through peer teaching experiences prior to student teaching (Knobloch, 2001). In addition, studies have revealed that self-efficacy in agricultural education teachers has a strong association to career commitment (Blackburn & Robinson, 2008; Knobloch & Whittington, 2003; McKim & Velez, 2015, 2016; Swan, 2005; Whittington, McConnell, & Knobloch, 2006). This discovery is important for agricultural education recruitment and retention to combat attrition rates among early career teachers (Foster, Lawver, & Smith, 2014).

Theoretical Framework

Jean Piaget's Constructivist Learning Theory was the grand theory applied to this study to explain the way preservice teachers develop their sense of self-efficacy and professional identity. Additionally, Bransford, Darling-Hammond, and LePage's (2005) framework for Understanding Teaching and Learning, Woo's (2013) Model of Professional Identity

Development in Counselors, and Albert Bandura's (1977) Social Cognitive Theory provided the theoretical framework for this study.

Jean Piaget's Constructivist Learning Theory

Teacher education and the practice of developing preservice teachers are rooted in educational constructivist theory (Doolittle & Camp, 1999). Now accepted as a foundational theory amongst educators, constructivism began as a philosophical perspective used to view the nature of learning (Schunk, 2004). Today, constructivism is defined as an approach to learning that emphasizes the active role that a learner takes in building and making sense of information (Woolfolk, 2016). How the information is constructed relies heavily on the individual learner. Doolittle and Camp (1999) posited that knowledge is both unique and personal, and is constructed through individual and social experiences.

Within the study, constructivism is the guiding force that aides the development of preservice teachers. Both Bandura's (1986) Social Cognitive Theory and Vygotsky's (1962) Socio-cultural Theory support the tenants of modern constructivism at play in teacher education practice. Constructivist pedagogy is integrated through authentic settings and social interactions, and is built upon prior knowledge (Doolittle & Camp, 1999). This approach is used to develop the curriculum of teacher education programs. Doolittle and Camp (1999) asserted that educators should use formative assessments to guide future learning, help preservice teachers become self-regulated, and help them take on the role of the facilitator while encouraging learning in a diversity of ways.

Framework for Understanding Teaching and Learning

Bransford, Darling-Hammond, and LePage's (2005) recognized the vast amounts of information teachers are required to maintain in order to be effective at teaching and learning,

and created a framework to illustrate those concepts. Areas of knowledge, skill, and disposition are shown in Figure 1 as a model to understanding teaching and learning.

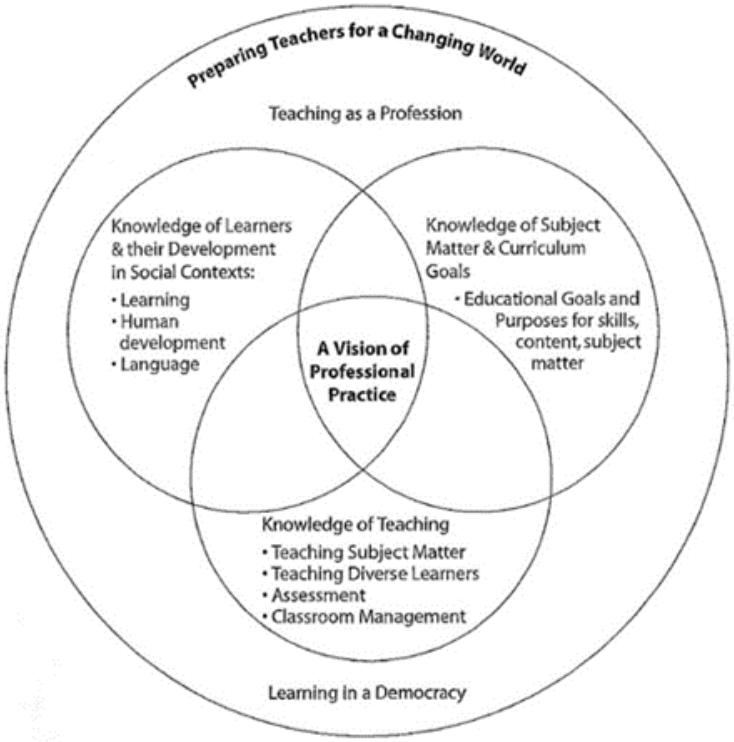

Figure 1. Diagram of the factors that influence the professional practice of teaching and learning. Adapted from "An Organizing Framework" by J. Bransford, L. Darling-Hammond, and P. LePage, 2005, *Preparing Teachers for a Changing World: What Teachers Should Learn and Be Able To Do*, p. 9-18. Copyright 2005 by John Wiley & Sons, Inc.

This diagram models the understanding required to prepare teachers for a changing world, and for this study, represents the model teacher education program. As preservice teachers enter the teacher education program, they are exposed to courses, observations, and fieldwork designed to develop their knowledge of learners, subject matter, and teaching. Firstly, teachers must understand learners in their unique social context, gauging their knowledge level as well as anticipating how they will learn and develop. Secondly, teachers must have an understanding of how to design curriculum and educational experiences that allow them to teach the content and

skills in a way that is relevant to the student's social context. Finally, the teacher must have an understanding of how to deliver material with the learner and content in mind, utilizing assessment and classroom management to support their teaching practice. At the center of this framework of understanding lies a teacher's ability to be the ideal vision of teaching within the profession. This vision, Bransford et al. (2005) reported, has been developed over 15 years of research from the National Board of Professional Teaching Standards, the New Teacher Assessment and Support Consortium, and multiple professional teaching associations. In addition, this framework draws form Dewey's (1902) idea that a learner's needs and the curriculum content should be mediated by the teacher. It also echoes Ball and Cohen's (1999) notion that instruction is influenced by the interactions of teachers, students, content, and the environment. Ultimately, this framework provides teachers with a lens that can be applied to any teaching situation and used to reflect and improve their practice (Bransford et al., 2005).

The understanding of teaching and learning is poised between teaching as a profession and learning in a democracy. These two conditions state that teachers are involved in a profession that maintains certain moral and technical expectations, and that the American education system is designed to serve the purpose of democracy. To benefit that democracy, teachers are asked to enable students to participate in the political, civic, and economic duties of a model citizen (Bransford et al., 2005). Finally, Bransford et al. (2005) stated that it is paramount that teachers understand their roles and responsibilities as a professional within their school community. While those roles and responsibilities are unique for agricultural education teachers (Terry & Briers, 2010), the concept of a teacher's professional role within a school manifests within an individual's professional identity.

Model of Professional Identity Development in Counselors

Gibson, Dollarhide, and Moss (2010) explained that an individual's professional identity is shaped within a person, and is a result of interpersonal dimensions that relate to one's relationship with society and their professional community. However, the phenomenon behind the development of an individual's professional identity is still largely under-researched. Because existing research regarding professional identity is restricted to specific populations at certain points of time, and few longitudinal studies on professional identity exist (Dobrow & Higgins, 2005; Monrouxe, 2009), several studies have expressed a need for greater information regarding the development of professional identity throughout the professional life span (Bischoff, Barton, Thober, & Hawley, 2002; Brott, 2006; Brott & Myers, 1999; Dollarhide, Gibson, & Moss, 2013; Gibson, Dollarhide, & Moss, 2010; Howard, Inman, & Altman, 2006; Rønnestad & Skovholt, 2003; Skovholt & Rønnestad, 1992).

In a recent study which sought to construct and validate the Professional Identity Scale in Counseling (PISC), Woo (2013) synthesized from literature the components that contribute to the development of professional identity in counselors. While counseling practitioners are not the same as teachers, their training and development are similar enough in their apprenticeship nature to be compared (Goodman, 1986; Hoy & Rees, 1977; Kagan, 1988; Tabachnick, 1980). This theory informs the study by providing a clear explanation of what content areas allow early practitioners, specifically preservice teachers, to develop and strengthen their professional identity as illustrated in Figure 2.

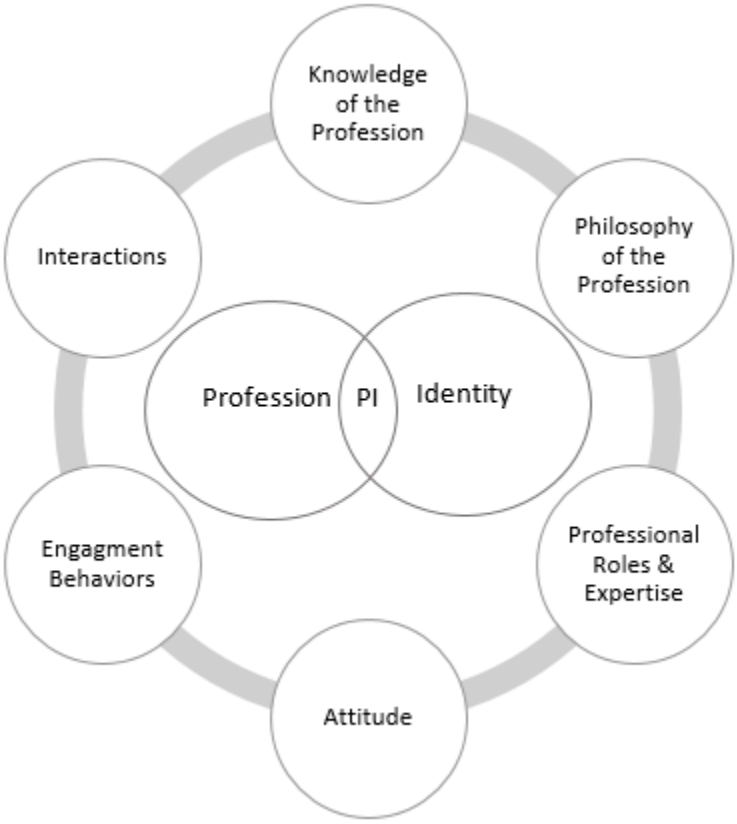

Figure 2. Model of the development of professional identity in counselors. Adapted from "Instrument Construction and Initial Validation: Professional Identity Scale in Counseling (PISC) (Dissertation)" by H. R. Woo, 2013, University of Iowa.

Figure 2 illustrates the factors that contribute to the development of one's professional identity. Woo (2013) posited that, "professional identity is identified as a state of mind that categorizes an individual as a member of a selected profession and develops over time" (p. 30). The factors that affect that development include knowledge of the profession, philosophy of the profession, professional roles and expertise, attitude, engagement behaviors, and interactions.

Multiple researchers (Brown, 1989; Smith, 2004; Vacc & Loasch, 1987) defined knowledge of the profession as a critical component of professional identity and one that is foundational to becoming an insightful member of the profession (Emerson, 2010). In the profession of counseling, this knowledge is considered to be the basic knowledge that includes

history, professional preparation, credential and certification, ethical standards, and peer reviewed journals (Woo, 2013). Additionally, an understanding of the philosophy of the profession is imperative to achieving a strong sense of professional identity (Remley & Herlihy, 2007). In counseling practitioners, they are able to distinguish their philosophy from other health care professionals. Scholars (Lafleur, 2007; Myers, 1992) believed that an individual's agreement with the philosophy of their profession is at the core of their professional identity.

The roles and expertise of a profession builds upon a body of knowledge and philosophy that is unique to the profession and usually not known by the public (Elliot, 1972; Emener & Cottone, 1989, McCully & Miller, 1969; Pietrofesa & Vriend, 1971). The literature for the counseling profession stated that the acquisition of expert knowledge, theory, and skills are vital to performing in professional roles that aid in professional identity formation ((Hall 1987; Van Zandt, 1990). Maintaining a positive relationship between oneself and the profession also contributes to the creation of professional identity (Brott & Myers, 1999; Gale & Austin, 2003; Mrdjenovich & Moore, 2004; Sweeny, 2001; VanZandt, 1990). This positive attitude and sense of pride for the profession demonstrates recognition of the profession's history, commitment to present practices, and faith in the future of the profession (VanZant, 1990).

Professional engagement behavior is another critical aspect of professional identity development (Feit & Lloyd, 1990; Gale & Austin, 2003; Myers & Sweeny, 2004; VanZandt, 1990; Zimpfer et al., 1992). Examples of these kinds of engagement behaviors include the involvement in professional associations, publishing and presenting, reading professional research and journals, advocacy efforts, maintaining credentials, and participating in community services (Healey & Hays, 2011; Puglia, 2008). Healey and Hays (2011) referred to these behaviors as actions taken by counselors who wish to become part of the profession. Finally, the

purposeful or guided interaction in the professional community develops one's professional identity (O'Bryane & Rosenberg, 1998). Dollarhide and Miller (2006) the interaction process of immersion into professional culture provides the individual the opportunity to learn appropriate professional values, attitudes, ways of thinking, and problem solving strategies (Gibson et al., 2010).

Social Cognitive Theory

The foundation of self-efficacy theory is derived from Albert Bandura's (1977) Social-cognitive Theory. This theory acknowledges that individuals are not living in an isolated environment, instead, they develop and function within numerous social influences (Bandura, 1986). Bandura (1986) explained that an individual's behavior, personal factors, and external environments all exist in a triadic reciprocal system as shown in Figure 3.

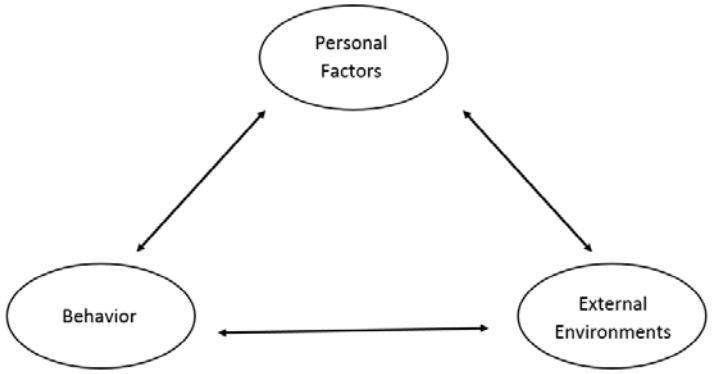

Figure 3. Model of triadic reciprocality. Adapted from *Social Learning Theory* (Bandura, 1977)

This model depicts the relationship that exists among the reciprocal factors of behavior, personality, and environment that affects and individual's cognitive function. The model is very situational, as Bandura (1977) explained, "there are times when environmental factors exercise

powerful constraints on behavior, and other times when personal factors are the overriding regulators of the course of environmental events" (p. 10). All these factors work together to define an individual's reality. Pajares (2000) explained that individuals are both "the products and producers of their environment and of their social systems" (p. 2). From this approach, emerged self-efficacy. Bandura (1997) defined self-efficacy as the "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (p. 3).

Combined Theory Model

The combined model, illustrated in Figure 4, provided the sample population and guided the data collection for the study. It combines the Constructivist Learning Theory, Framework for Understanding Teaching and Learning, Model of Professional Identity Development, and Social-Cognitive Theory model. The illustration depicts the development of a student's professional identity and self-efficacy beginning with their degree program and moving through their teacher education program experience. Students are shown as constructing their professional identity and self-efficacy in alignment with their degree program.

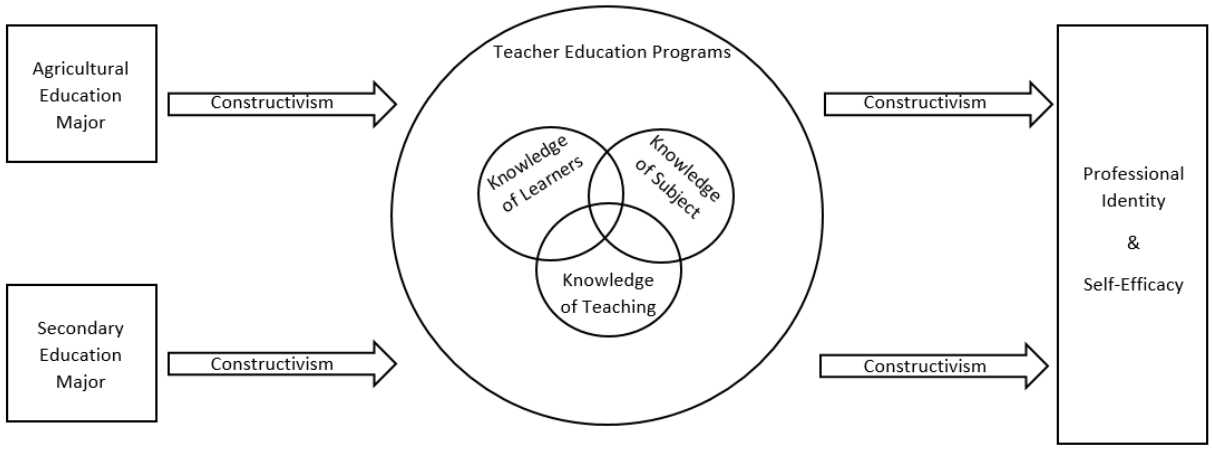

Figure 4. The Combined Constructivist Learning Theory, Framework for Understanding Teaching and Learning, Model of Professional Identity Development, and Social-Cognitive Theory model.

Though both agricultural education and secondary education majors will process their credentialing paperwork with the college of teacher education and assume the title of preservice teacher, separate colleges confer their degrees. As they make the transition into the teacher education program, the constructivist learning theory is applied to demonstrate their ability to construct knowledge. It is worth noting that the constructivist pathway is exclusive for each group, as the literature has stated; knowledge is both unique and personal, and is constructed through individual and social experiences (Doolittle & Camp, 1999). The college of agriculture and college of education offer different individual and social experiences to their students, resulting in a different internalization of the same content. That content is represented by the teacher education program.

The teacher education program strives to prepare students of all disciplines for a changing world. This model identifies the key concepts required for the successful understanding of teaching and learning through knowledge of learners, subject, and teaching. These concepts, when balanced, revolve around the ideal vision of the teaching profession, as described by Bransford et al. (2005). Preservice teachers construct this conceptual knowledge through their required courses, field work, and observations. At the completion of their teacher education program, they have begun to develop their sense of professional identity and self-efficacy as teachers as a result of their experiences (Bandura, 1977; Moss, Gibson, & Dollarhide, 2014). This development is illustrated by separate arrows representing the different individual and social experiences that have been provided by their disciplinary colleges which contribute to their sense of self-efficacy and professional identity.

Jean Piaget's Constructivist Learning Theory; Bransford; Darling-Hammond, and LePage's (2005) framework for Understanding Teaching and Learning; Moss, Gibson, and

Dollarhide's (2014) Model of Professional Identity Development; and Albert Bandura's (1977) Social Cognitive provided the theoretical framework for the study. Constructivism explains the learning process utilized by agricultural education and secondary education preservice teachers in the teacher preparation program. This learning theory also justifies why, even though the same concepts are being presented, the knowledge is being constructed differently. The concepts of a teacher education program are provided by the framework for Understanding Teaching and Learning. Finally, professional identity and self-efficacy represent the intended outcome of all preservice teachers.

Summary

The purpose of this chapter was to provide a rationale and context for the study by synthesizing the literature that exists regarding the history and development of teacher education, and the effects teacher education programs have on teachers' self-efficacy and professional identity. The history of teacher education, especially for agricultural education teachers, has been scrutinized and criticized for over a century in hopes of finding a way to prepare teachers for a changing world. Bransford et al. (2005) offered a framework for this development through their Understanding Teaching and Learning model. It is through these effective teacher education programs, grounded in the practice of constructivist learning theory, preservice teachers are entering the classroom with a sense of professional identity and self-efficacy. Research has revealed that while professional identity and self-efficacy are beneficial to the teaching profession (Ashton & Webb, 1986; Bandura, 1997; Dembo & Gibson, 1985; O'Bryant, 1992; Putman, 2012; Skaalvik & Skaalvik, 2008; White, 2009; Woolfolk, Rosoff, & Hoy, 1990) the development of those constructs are unique to the individual's personal and social experiences (Doolittle & Camp, 1999). Due to the common separation of agricultural education from the

college of education, a preservice teachers' experiences may differ based on their college of discipline. Jean Piaget's Constructivist Learning Theory, Bransford; Darling-Hammond, and LePage's (2005) framework for Understanding Teaching and Learning, Moss, Gibson, and Dollarhide's (2014) Model of Professional Identity Development, and Albert Bandura's (1977) Social Cognitive Theory guided this study. The concepts of self-efficacy and professional identity, along with the differences in the college of agriculture and the college of education, provided the study's conceptual framework. The methodology of the study will be examined in chapter three.

Methodology

Introduction

The purpose of this quantitative study was to explore the attitudes and relationships of preservice agricultural education teachers and other secondary education preservice teachers in regards to their self-efficacy and professional identity. The methodology utilized in this study is detailed in this chapter and includes explanation on the population and sample selection, instrument development and testing, methods and procedures of data collection, and data analysis.

Purpose and Objectives

The purpose of this study was to describe the self-efficacy and professional identity of preservice agricultural education teachers and other secondary education preservice teachers. The following objectives guided the study:

1. To describe the self-efficacy of agricultural education preservice teachers and other secondary education preservice teachers.
2. To describe the professional identity of agricultural education preservice teachers and other secondary education preservice teachers.
3. To describe the relationship between agricultural education preservice teachers' self-efficacy and professional identity.
4. To describe the relationship between other secondary education preservice teachers' self-efficacy and professional identity.

Population and Sample

The population for this study included all land-grant colleges and universities with both agricultural education and teacher education departments. The institutions were selected by cross referencing the National Association of Agriculture Educators' (NAAE) college database with the list of National Institution of Food and Agriculture (NIFA) Land-Grant Colleges and Universities. There were 53 institutions identified as being established through the Land-Grant Act (1862, 1890, and 1994), that included both agricultural education and teacher education departments. Of the initial 53 institutions that created the population for this study, 21 agreed to participate in the survey. The office of teacher education was contacted first for each institution to establish a contact for agricultural education and secondary education preservice teachers. Three were removed because the agricultural education degree program was only offered at the Master's level, three were removed because their institution no longer offered an agricultural education degree, and two were removed because their agricultural education programs were not housed in the college of agriculture. An additional 24 institutions opted out of the study (n = 11) or did not respond (n = 13) to the initial invitation or the three follow up invitations which included both calls and emails.

Subjects who were asked to participate in this study consisted of agricultural education and other secondary education preservice teachers from the previously identified land-grant institutions. Whether a participant was grouped in agricultural education or in secondary education was determined by the respondents' self-reported major. Majors identified for this study included agricultural education, secondary education, history, technology, music, family and consumer science, Spanish, English, and math. Requirements for participation were based on

the preservice teachers' eligibility to student teach in the spring of 2018, having completed at least 80% of their degree coursework for their respective degree program.

Instrument Development and Testing

The instrument developed for this study was modified by the researcher to evaluate preservice teachers' attitudes toward their self-efficacy and professional identity as a teacher. The instrument implemented for data collection was created from two previously established scales. The use of previously established scales is recommended to ensure validity and reliability (Ary, Jacobs, & Sorensen, 2010). Ary, Jacobs, and Sorensen (2010) defined validity as the extent to which an instrument measures a construct, and reliability as the degree of consistency with which an instrument measures a construct.

The construct of professional identity was measured using an adaptation of the Professional Identity Scale in Counseling (PISC) which focuses on six subscales: knowledge of the profession, philosophy of the profession, professional roles and expertise, personal attitude, engagement behavior, and professional values (Woo, 2013). The comprehensive list of items within each subscale have been identified through their repeated appearance in literature regarding professional identity and congruency with the philosophy of counseling. The PISC included 62 questions on a six-point Likert scale that ranged from "not at all in agreement" to "totally in agreement". Examples of questions include: "I know the origins of the counseling profession", "It is important to empower clients through an emphasis on personal strengths", and "I educate the community and public about my profession" (Woo, 2013, p. 102-106).

Woo (2013) reported that four of the six subscales illustrated strong internal consistency (≥ 0.804) via Cronbach's alpha values as shown in Table 1. High internal consistency was not reported for philosophy of the profession ($\alpha = 0.717$) and professional values ($\alpha = 0.44$).

Table 1

PISC Model

Subscale	Eigenvalues	Variance %	Cumulative %	Cronbach's alpha
Engagement Behaviors	6.510	10.500	10.500	0.884
Knowledge of the Profession	5.913	9.537	20.037	0.879
Professional Roles and Expertise	4.396	7.090	27.127	0.804
Attitude	4.075	6.573	33.700	0.818
Philosophy of the Profession	3.160	5.097	38.797	0.717
Professional Values	2.322	3.746	42.542	0.440

To measure validity, Pearson's Correlations were analyzed between the PISC and two other instruments, Professional Identity and Value Scale (PIVS) and Marlowe-Crowne Social Desirability Scale (M-C [20]). Overall, positive correlations were found between the PISC and the PIVS ($r = 0.473$, $p < 0.01$), both of which shared similar constructs. Correlation of the M-C (20) revealed concurrent validity as there were no significant data to support that participants were responding to the test to appear socially desirable (Woo, 2013).

For the instrument's use in the current study, questions were modified to reflect the education profession. The face and content validity of the modified instrument were tested through cognitive interviews with an agricultural education professor and graduate student. Changes to the instrument were based on the interviewees' suggestions to improve clarity and

readability. The modified instrument was also pilot tested to determine reliability using preservice agricultural education students at the University of Arkansas. An overall internal consistency ($\alpha = 0.783$) was achieved after removing four questions from the engagement behaviors subscale.

The construct of self-efficacy was measured using the Teacher's Sense of Efficacy Scale (TSES) which evaluates the teacher's perceived efficacy of student engagement, instructional strategies, and classroom management (Tschannen-Moran & Woolfolk Hoy, 2001). The TSES was adapted from original form to include 22 items that asked how much, how well, or to what extent a teacher can do for their student. The responses were indicated on a nine-point Likert scale that ranged from "nothing" to "a great deal". Examples of questions included: "How much can you do to get through to a difficult student", "How well can you respond to difficult questions from your students", and "To what extent can you craft good questions for your students". Gibson and Dembo (1984) performed a factor and multitrait-multimethod analysis to measure the Teacher Efficacy Scales' ability to measure the construct of teacher efficacy. The researchers reported that the TSES possessed significant convergent validity ($r = .42$, $p < .001$). Additionally, the evidence concluded that the instrument was also distinctly different from similar constructs, verbal ability and flexibility. Cronbach's alpha coefficients revealed acceptable internal consistency ($\geq .75$).

The two instruments were combined into a single questionnaire. A panel of experts consisting of four faculty members from Agricultural and Extension Education programs at two different institutions evaluated the questionnaire's face and content validity and found the instrument to possess face and content validity. The questionnaire's reliability was tested *post hoc* and resulted in a coefficiency alpha of 0.709. The finalized instrument consisted of 68

questions on a Likert scale, 46 used to measure professional identity and 22 questions to measure self-efficacy (see Appendix A).

Methods and Procedures

Data collection protocol for this quantitative study followed Dillman, Smyth, and Christian's (2009) mixed-mode survey design method. The mixed-mode method was chosen to provide respondents with the choice of either mail or electronic surveys. This type of mixed-mode method improves response rates, reduces survey cost, and reduces nonresponse error (Dillman, Smyth, & Christian, 2009).

After approval from the Institutional Review Board (IRB) was granted (see Appendix B) at the beginning of the 2017-2018 academic school year, initial contact was made with the office of teacher education at each of the 52 land-grant institutions. The purpose of this initial contact was to provide them with an understanding of the study and confirm the primary contact for each institution (see Appendix C). Some institutions' teacher education specialists opted to be the primary contact for this study, while others deferred this to individuals either within the college of agriculture or college of education.

Once a primary contact had been determined, and electronic or mailed survey preference recorded, the institutions received a standard pre-notice letter (see Appendix D) via email four days prior to the scheduled survey administration. Because the researcher did not have access to the respondents' emails unless provided by the institution, the original pre-notice letter that was approved by IRB was modified to address the primary contact. For those institutions that opted to receive their surveys through the mail, they were mailed out on the same days as the pre-notice email. Mailed surveys were sent first class and included pre-paid return postage to three

institutions. Both mailed and electronic survey correspondence included a letter to the primary contact with instructions and information on incentives (see Appendix E) with a consent form (see Appendix F). The consent forms were addressed to the preservice teachers and provide information regarding the purpose of the study and thanked the respondents for participating. To increase response rates, incentives were included by raffling off two $25 gift cards to those respondents who completed the survey.

The electronic survey was administered through Qualtrics and was the same for all respondents. The Qualtrics survey was adapted to a paper copy for those who opted to complete a mailed survey. Both surveys were estimated to take 30 minutes to complete. Due to the varied schedules at each institution, the respondents were given nine weeks to complete the surveys. For those who opted to complete electronic surveys, emails were sent to remind them weekly of the survey's deadline and offer replacement Qualtrics links.

Data Analysis

To address objectives one and two, descriptive statistics were used to describe the self-efficacy and professional identity in respondents. Mean values and standard deviations were calculated using Microsoft Excel. Objectives three and four sought to compare the relationship between self-efficacy and professional identity in agricultural education and secondary education preservice teachers using the Pearson's Correlation test in SPSS.

Summary

This quantitative study sought to describe the self-efficacy and professional identity of preservice agricultural education teachers and other secondary education preservice teachers. The instrument developed for this study was a modification of the Teacher's Sense of Efficacy

Scale and the Professional Identity Scale combined into a 75 question survey. Data were collected from land-grant universities and colleges through either electronic or paper surveys. Data were analyzed using descriptive statistics and Pearson's Correlations. The results of the analysis are reported in the next chapter.

Findings

Introduction

Self-efficacy and professional identity have been identified as constructs that greatly effect teachers. Self-efficacy influences a teacher's abilities and performance in the classroom and (Putnam, 2012). Low self-efficacy has been reported as a cause of attrition among teachers (Skaalvik & Skaalvik, 2008; Whittington, McConnell, & Knobloch, 2006). Professional identity influences not only an individual teacher's sense of belonging in the teaching profession, but impacts the future of the profession as a whole (O'Bryant, 1992; White, 2009). Therefore, exploring the differences that may possibly exist among preservice teachers regarding these construct could prove beneficial to understanding how agricultural education and other secondary education degree programs are developing the nation's next generation of teachers.

The purpose of this study was to describe the self-efficacy and professional identity of preservice agricultural education teachers and other secondary education preservice teachers using descriptive statistics. The questionnaire responses received for the study underwent a *post hoc* analysis. Three questions were removed from the professional identity scale to maintain internal consistency: (1) question one in Philosophy of the Profession (0.286) was removed to retain an acceptable Cronbach's $\alpha = 0.709$, (2) question one in Engagement Behavior (0.551) was removed to retain an acceptable Cronbach's $\alpha = 0.847$, and (3) question one in Professional Values (0.570) was removed to retain an acceptable Cronbach's $\alpha = 0.888$. The removal of these questions resulted in a Professional Identity Scale with an alpha coefficient of ≥ 0.709, which is an acceptable reliability coefficient (Nunnaly, 1978).

Demographic Characteristics

The population for this study combined agricultural education preservice teachers (*n* = 68) and other secondary education preservice teachers (*n* = 17) from 13 land-grant universities. Preservice teachers had to be eligible to student teach in the spring of 2018, indicating they had completed at least 80% of their degree program. Participant demographics collected included gender, university, and major.

Gender. Respondents were asked which gender they identified with to acquire gender demographics from the participating universities. The majority of respondents were female (71%). Results are shown below in Table 2.

Table 2

*Preservice Teachers' Gender (*N = *85)*

Gender	*f*	%
Male	18	21.17
Female	60	70.59
Non-Disclosed	7	8.24
Total	85	100.00

University. Responses were collected from preservice teachers at 13 land-grant universities. One university provided both agricultural education and other secondary education preservice teachers, seven universities provided only agricultural education preservice teachers, and five universities provided only secondary education preservice teachers. The majority of responses came from Texas A&M University (25%), followed by the University of Kentucky (16%) and the University of Florida (14%), all of which provided responses for agricultural education preservice teachers only. The University of Nebraska (12%) provided the majority of responses for secondary education preservice teachers. Results are shown below in Table 3.

Table 3

*Preservice Teachers' University (*N = *85)*

University	*f*	%
Alabama A&M	1	1.18
University of Arkansas	4	4.71
University of Florida	12	14.12
University of Georgia	1	1.18
Kansas State University	2	2.35
University of Kentucky	14	16.47
Montana State University	3	3.53
University of Nebraska	10	11.76
New Mexico State University	1	1.18
Oregon State University	5	5.88
Pennsylvania State University	10	11.76
Purdue University	1	1.18
Texas A&M University	21	24.70
Total	85	100.00

Major. Respondents were asked to report their major so the researcher could distinguish between agricultural education and secondary education preservice teachers. Nine different majors were identified in this study. Majors reported as agricultural science, career and technical education, agricultural and extension education, and agricultural education and communication were coded as agricultural education (80%). Social science and social studies were coded as history, engineering technology teacher education was coded as technology, and education was coded as secondary education (20%). Other secondary education majors included family and consumer science, music, English, Spanish, and math. Results are shown below in Table 4.

Table 4

*Preservice Teachers' Major (*N = *85)*

Major	*f*	%
Agricultural Education	68	80.00
Secondary Education	3	3.53
History	3	3.53
Technology	1	1.18
Music	3	3.53
Family & Consumer Science	1	1.18
Spanish	2	2.35
English	2	2.35
Math	2	2.35
Total	85	100.00

Results

Objective One

Objective one sought to describe the self-efficacy of agricultural education preservice teachers and other secondary education preservice teachers. Using descriptive statistics, the means and standard deviations were calculate in Microsoft Excel for the responses of the Teacher Self Efficacy Scale for agricultural education preservice teachers (n = 68) and the other secondary education preservice teachers (n = 17). Table 5 displays the summated mean scores and standard deviations for each sample group's overall score, as well as their score for each of the instrument's sub scales: student engagement (six items), instructional strategies (seven items), and classroom management (eight items).

Table 5

Self-efficacy of Agricultural Education Preservice Teachers and Other Secondary Education Preservice Teachers

Self-Efficacy	Range	Agricultural Education[a]		Secondary Education[b]		Cohen's *d*
		M	*SD*	*M*	*SD*	
Engagement	1-54	39.72	8.46	39.71	4.98	0.00
Instruction	1-63	46.03	10.10	45.59	7.63	0.05
Management	1-72	54.91	11.45	50.94	6.41	0.44
Overall	1-189	149.21	24.51	143.0	14.75	0.32

Note. [a]n = 68, [b]n = 17, Instrument based on a 9-point Likert scale (1 – nothing to 9 – a great deal).

Overall, agricultural education scored higher than secondary education in all subscale areas of the Teacher Self Efficacy Scale. Both agricultural education and secondary education preservice teachers scored highest in the classroom management subscale. The classroom management subscale also revealed the greatest difference between the two groups with a

moderate effect size (Cohen's $d = 3.97$). In student engagement and instructional strategies the effect size was small.

Objective Two

Objective one sought to describe the professional identities of agricultural education preservice teachers and other secondary education preservice teachers. Using descriptive statistics, the means and standard deviations were calculated in Microsoft Excel for the responses of the Professional Identity Scale for agricultural education preservice teachers ($n = 68$) and the other secondary education preservice teachers ($n = 17$). Table 6 displays the summated mean scores and standard deviations for each sample group's overall score, as well as their score for each of the instrument's sub scales: knowledge of the profession (seven items), philosophy of the profession (three items), professional roles and expertise (six items), personal attitude (11 items), engagement behavior (10 items), and professional values (six items).

Table 6

Professional Identity of Agricultural Education Preservice Teachers and Other Secondary Education Preservice Teachers

Professional Identity	Range	Agricultural Education[a]		Secondary Education[b]		Cohen's *d*
		M	*SD*	*M*	*SD*	
Knowledge of the Profession	1-49	39.46	5.72	39.82	5.77	0.06
Philosophy of the Profession	1-21	16.87	2.93	18.59	4.96	0.44
Professional Roles and Expertise	1-42	35.91	6.76	37.53	4.96	0.28
Attitude	1-77	65.46	11.12	67.29	6.74	0.20
Engagement Behavior	1-70	48.06	12.02	49.41	9.04	0.13
Professional Values	1-42	30.47	8.37	35.24	6.33	0.65
Overall	1-301	236.22	33.68	246.82	27.80	0.34

Note. [a]$n = 68$, [b]$n = 17$, Instrument based on a 7-point Likert scale (1 – strongly disagree to 7 – strongly agree).

Overall, secondary education scored higher than agricultural education in all subscale areas of the Professional Identity Scale. Both agricultural education and secondary education preservice teachers scored highest in the attitude subscale. The professional values subscale revealed the greatest difference between the two groups with a large effect size (Cohen's d = 0.65). Moderate effect sizes were found between the two groups in the Philosophy of the Profession, Professional Roles and Expertise, and Attitude. Knowledge of the Profession and Engagement Behaviors revealed a small effect size.

Objective Three

Objective three sought to describe the relationships between self-efficacy and professional identity in agricultural education preservice teachers. Data were analyzed using a Pearson's Correlation to determine if a relationship existed between two independent variables, self-efficacy and professional identity. After the initial test was run, assumptions of linearity were not met. A square root transformation was applied to both variables to reveal a slightly negative linear relationship. Not all variables were normally distributed, as assessed by the Shapiro-Wilk's Test ($p < .05$). However, the decision to continue was justified by the robust nature of the Pearson's Correlation method ("Pearson Correlation in SPSS," n.d.).

The Pearson's Correlation was run using SPSS revealed there was a negligible correlation ($r = .078$) between self-efficacy and professional identity in agricultural education preservice teachers. The indicated scores on one variable explained less than 1% ($r^2 = .006$) variance in the other variable.

Objective Four

Objective four sought to describe the relationship between secondary education preservice teachers' self-efficacy and professional identity. Data were analyzed using the Pearson's Correlation method to determine if a relationship existed between two independent variables, self-efficacy and professional identity. The data revealed a slightly positive linear relationship between the variables. Assumptions of normality were also met.

The Pearson's Correlation was run using SPSS revealed that there was a small correlation ($r = .20$) between self-efficacy and professional identity in secondary education preservice teachers. Thus, one variable explained 4% ($r^2 = .04$) of the variance in the other variable.

Summary

This chapter included demographic information to provide an accurate description of the preservice teachers who participated in the study (N = 85). Respondents were sampled from 13 different land-grant institutions and represented nine different majors. This chapter reported on the findings of the study based on the research objectives. Objectives included: (a) to describe the self-efficacy of agricultural education preservice teachers and other secondary education preservice teachers, (b) to describe the professional identity of agricultural education preservice teachers and other secondary education preservice teachers, (c) to describe the relationship between agricultural education preservice teachers' self-efficacy and professional identity, (d) to describe the relationship between other secondary education preservice teachers' self-efficacy and professional identity.

Chapter 5 will reintroduce these findings and discuss their implications, providing conclusions and making recommendations based on the study's research objectives. Additionally, Chapter 5 will explain the impact these findings have on the preparation of preservice teachers and the future of the teaching profession.

Conclusion, Implications, and Recommendations

Introduction

The purpose of this study was to describe the self-efficacy and professional identity of preservice agricultural education teachers and secondary education preservice teachers. The following objectives guided the study:

1. To describe the self-efficacy of agricultural education preservice teachers and other secondary education preservice teachers.
2. To describe the professional identity of agricultural education preservice teachers and other secondary education preservice teachers.
3. To describe the relationship between agricultural education preservice teachers' self-efficacy and professional identity.
4. To describe the relationship between other secondary education preservice teachers' self-efficacy and professional identity.

The results discovered through descriptive statistics described agricultural education and secondary education preservice teachers' self-efficacy and professional identity. The findings, implications, and recommendations for this study are discussed in this chapter using the objectives presented in chapter one.

Summary of Results

Objective One: To describe the self-efficacy of agricultural education preservice teachers and other secondary education preservice teachers. Agricultural education preservice teachers scored higher than secondary education preservice teachers in every area on the Teacher Self Efficacy Scale. While the scores in the subscales of student engagement and instructional strategies were very close, the classroom management subscale revealed the greatest difference between the two groups with a moderate effect size (Cohen's $d = 3.97$).

Objective Two: To describe the professional identity of agricultural education preservice teachers and other secondary education preservice teachers. Secondary education preservice teachers scored higher than agricultural education preservice teachers in every area on the Professional Identity Scale. Medium effect sizes were found between the two groups in the Philosophy of the Profession, Professional Roles and Expertise, and Attitude. Knowledge of the Profession and Engagement Behaviors revealed a small effect size. The professional values subscale revealed the greatest difference between the two groups with a large effect size (Cohen's $d = 0.65$).

Objective Three: To describe the relationship between agricultural education preservice teachers' self-efficacy and professional identity. Pearson's Correlation revealed there was a negligible correlation ($r = .078$) between self-efficacy and professional identity in agricultural education preservice teachers. The indicated scores on one variable explained less than 1% ($r^2 = .006$) variance in the other variable.

Objective Four: To describe the relationship between other secondary education preservice teachers' self-efficacy and professional identity. Pearson's Correlation revealed

there was a small correlation (r = .20) between self-efficacy and professional identity in secondary education preservice teachers. Thus, one variable explained 4% (r^2 = .04) of the variance in the other variable.

Conclusions

Based on the study's findings and developments, several conclusions were reached regarding the self-efficacy and professional identity of preservice teachers. The following conclusions were drawn using the study's sample population and applies only to the respondents who participated in the study.

1. Agricultural education preservice teachers possessed a slightly higher level of self-efficacy than other secondary education preservice teachers.
2. Secondary education preservice teachers possessed a slightly higher level of professional identity than agricultural education preservice teachers.
3. There was a negligible relationship between self-efficacy and professional identity among agricultural education preservice teachers.
4. There was a small relationship between self-efficacy and professional identity among secondary education preservice teachers.

Discussion and Implications

Objective One: To describe the self-efficacy of agricultural education preservice teachers and other secondary education preservice teachers. Self-efficacy, as defined by Tschannen-Moran and Wolfolk Hoy (2001), refers to a teacher's confidence and ability regarding student engagement, instructional strategies, and classroom management. These constructs were evaluated using the Teacher Self Efficacy Scale and revealed that both groups

perceived themselves as generally self-efficacious, with agricultural education preservice teachers scoring slightly higher in all areas. The generally effective scores have been previously reported by Rimm-Kaufman and Sawyer (2005), who described preservice teachers as being generally effective in areas of instruction and management. Chan (2008) presented a conflicting view when he reported that preservice and new career teachers were significantly less effective in the area of classroom management. However, results from the current study were inconsistent with Chan's (2008) findings, as both agricultural education and secondary education preservice teachers scored highest in this area.

These findings could imply the success of degree programs as they prepare efficacious teachers for the classroom. Knobloch (2001) accredited this success to the implementation of field observations and peer teaching experiences prior to student teaching, as these experiences raise preservice teachers' sense of self-efficacy. However, the level at which preservice teachers in this study were exposed to these teaching experiences were not reported. Therefore, the lack of experience could also imply a sense of false self-efficacy which Knoblock and Hoy (2008) and Woolfolk Hoy and Spero (2005) reported as a result of not yet being exposed to the full time demands and independence of an in-service teacher.

As for the slight increase in efficacy for agricultural education preservice teachers, this could imply the strong sense of career commitment that these preservice teachers possess, as reported in previous studies by Blackburn and Robinson (2008), Knoblock and Whittington, (2003), and Whittington, McConnell, and Knoblock (2006). This is important because Smith, Lawver, and Foster (2017) reported hundreds of school based agricultural education teaching positions being left unfilled. A strong sense of commitment to the teaching career and a high sense of self-efficacy could help battle teacher attrition rates. All disciplines of education have

been affected by this teacher shortage. Hughes (2012) reported that between 20% and 50% of all teachers leave the classroom within the first five years of teaching, and a teacher's lack of self-efficacy has been identified as a contributing factor according to Skaalvik and Skallvik (2008), and Whittington, McConnell, and Knoblock (2006).

Objective Two: To describe the professional identity of agricultural education preservice teachers and other secondary education preservice teachers. Doolittle and Camp (1999) defined professional identity as the way someone perceives themselves as an individual, as well as a part of a larger professional group. The Professional Identity Scale in Counseling was developed by Woo (2013) and modified for this study to reflect the education industry. Based off of Woo's (2013) literature synthesis, factors that influence professional identify include knowledge of the profession, philosophy of the profession, professional roles and expertise, attitude, engagement behaviors, and interactions. Both agricultural education and secondary education preservice teachers were tested using this scale and scores revealed that secondary education preservice teachers held a slightly higher sense of professional identity in all areas. Overall, the scores were generally high. This could imply the success of teacher education programs based on the conclusion of Brott and Myers (1992) and Lafleur (2007) who identified strong professional identity as an indicator of career success in counselors. The comparison of counseling to education has previously been established and deemed appropriate by Kagan (1988). While professional identity research in the educational field is limited, educational researchers Conley and Cooper (1991), Darling-Hammond (1984; 1995), and Talbert and McLaughlin (1993) have reported increases in teacher commitment, performance, and student learning as a result of professional identity development.

The slight increase in secondary education over agricultural education may be explained by what Shoulders and Myers (2012) posited as the agricultural education teacher's alignment to the agricultural profession rather than the educational profession. This discrepancy between agriculture and education has been previously noted by Herren and Hillison (1996) who refer to the way agriculture teachers' perceive their subject matter, agricultural educators, and the agricultural profession with a strong kinship. When comparing the literature of Morey, Bezuk, and Chiero's (1997) to Myers and Dyer's (2004) in regards to teacher preparation, there is less of a focus on pedagogy among agricultural education degree programs. Shulman (1986; 1987) argued that the importance of fundamental pedagogical knowledge surpassed that of content specialization. Therefore, this deficit may help explain the difference in how the groups perceive their professional identity as an educator.

It should be noted that this difference does not empirically prove that secondary education preservice teachers with a higher sense of professional identity are better at teaching. However, this slight decrease in professional identity among agricultural education preservice teachers could imply a threat to the agricultural education profession. Professional identity transcends the individual and affects the larger profession. O' Bryant (1992) and White (2009) explained that professional identity influences one's ability to advocate for their discipline or profession. Smith, Lawver, and Foster (2017) reported that in the case of agricultural education, the profession is currently plagued by a teaching shortage. Attrition rates among agriculture teachers could be worsened by their lack of alignment with professional identity.

Objective Three: To describe the relationship between agricultural education preservice teachers' self-efficacy and professional identity. The Pearson Product Correlation method yielded negligible correlation ($r^2 = 0.08$) between the two variables. However, Brott and

Myer's (1992) and Lafleur's (2007) research has stated professional identity indicated success and the research of Knobloch (2001) stated self-efficacy indicated classroom success. This lack of correlation between these two indicators of success could imply that agricultural education preservice teachers are experiencing disconnect between their perceived ability to teach and their perceived identity as a teacher. This implication was recognized by Shoulders and Myers (2011) who reported that in-service agricultural teachers feel their professional development is not congruent with their sense of professional identity.

Objective Four: To describe the relationship between other secondary education preservice teachers' self-efficacy and professional identity. A small correlation ($r^2 = 0.04$) was revealed between the two variables through the Pearson's Correlation method. As stated previously, this small correlation is inconsistent with Brott and Myer's (1992) and Lafleur's (2007) research that stated professional identity indicated success and the research of Knobloch (2001) which stated self-efficacy indicated classroom success. However, the small relationship between these two indicators of success could be accredited to the interdisciplinary nature of secondary education. Within education, Kaufman and Brooks (1996) reported that collaboration is encouraged among preservice teachers. Conversely, agricultural education is withheld from this collaboration. As stated by Herren and Hillison (1996), efforts made to place agricultural education preservice teachers closer to their subject specialists resulted in distancing themselves from pedagogical specialists. This alignment may result in secondary education preservice teachers that are more in sync with their sense of efficacy and identity as a teacher than their agricultural education counterparts.

Recommendations

This study was conducted to describe the self-efficacy and professional identity of agricultural education preservice teachers and other secondary education preservice teachers. The formation of these constructs are explained through the combined model of Constructivist Learning Theory, Framework for Understanding Teaching and Learning, Model of Professional Identity Development, and Social-Cognitive Theory model. This model capitalizes on the idea that self-efficacy and professional identity develop over time and is influenced by an individual's experience. The desire for developing efficacious and professional preservice teachers has been highlighted by the Research Agenda for Teacher Education (Zeicher, 2005) and the American Education Research Association (Cochran-Smith & Zeichner, 2009) through gaining a better understanding of how teacher education programs are preparing preservice teachers.

This study was able to capture preservice teachers' perception of their self-efficacy and professional identity prior to their student teaching experience. This study has provided baseline data for much needed research that brings into consideration that progress of other secondary education majors when evaluating agricultural education. Further research with more experienced teachers in the form of a longitudinal study is recommended to establish the trends of self-efficacy and professional identity throughout secondary teacher career cycles. This recommendation echoed that of Putnam (2012) who identified the vital need for creating career cycles that demonstrated self-efficacy as this has been linked to increase teacher retention. Additionally, Gibson et al. (2010) described the development of professional identity as a process that occurs over time and could be better examined through a longitudinal study. This has been research approach has been used in the counseling profession (Woo, 2013) but is lacking literature in the educational field. Being able to follow the development of self-efficacy

and professional identity throughout preservice teacher preparation and into classroom life cycles could help strengthen degree programs' teacher preparation and reduce attrition rates among teachers of all disciplines.

The construct of self-efficacy has existed in the educational field for many years. Professional identity, however, is a newly emerging construct for educational research, especially in the area of agricultural education. This is an unfortunate disparity, as reported by Shoulders and Myer (2011), because agricultural education teachers possess a sense of incongruence with their professional identity as a teacher. More research is recommended to gain a deeper understanding of agriculture teachers' professional identity through qualitative means. Development of professional identity has been identified by researchers in the counseling field as an indicator of success. Kagan (1988) argued that the counseling and educational fields were comparable, therefore better understanding of teachers' professional identity could lead to success in the classroom.

The literature reviewed for this study indicates the possibility of a causal relationship between these two constructs, however a more rigorous, qualitative study that provides generalizability through continuous comparative research in this area is recommended to provide empirical evidence as to of how self-efficacy and professional identity influence teacher success and how these constructs influence each other. Finally, in regards to the study's methodology, the use of a small, non-stratified sample created a limitation in generalizability. Maintaining sample sizes of equal value in both agricultural education and other secondary education that are generalizable to the preservice teacher population among land-grant universities is highly recommended to improve this study.

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Appendices

Appendix A. Self-Efficacy and Professional Identity Survey

Section 1: Self-Efficacy

Please indicate your opinion about each of the statements.

	Nothing	Very Little		Some Influence		Quite A Bit		A Great Deal	
How much can you do to get through to the most difficult students?	○	○	○	○	○	○	○	○	○
How much can you do to help your students think creatively?	○	○	○	○	○	○	○	○	○
How much can you do to control disruptive behavior in the classroom?	○	○	○	○	○	○	○	○	○
How much can you do to motivate students who show low interest in school work?	○	○	○	○	○	○	○	○	○
To what extent can you make your expectations clear about student behavior?	○	○	○	○	○	○	○	○	○

How much can you do to get students to believe they can do well in school work?	○	○	○	○	○	○	○	○	○
How well can you respond to difficult questions from your students?	○	○	○	○	○	○	○	○	○
How well can you establish routines to keep activities running smoothly?	○	○	○	○	○	○	○	○	○
How much can you do to help your students value learning?	○	○	○	○	○	○	○	○	○
How much can you gauge student comprehension of what you have taught?	○	○	○	○	○	○	○	○	○
To what extent can you craft good questions for your students?	○	○	○	○	○	○	○	○	○
How much can you do to get children to follow classroom rules?	○	○	○	○	○	○	○	○	○
How much can you do to improve the understanding of a student who is failing?	○	○	○	○	○	○	○	○	○

How much can you do to calm a student who is disruptive or noisy?	○	○	○	○	○	○	○	○	○
How well can you establish a classroom management system with each group of students?	○	○	○	○	○	○	○	○	○
How much can you do to adjust your lessons to the proper level for individual students?	○	○	○	○	○	○	○	○	○
How well can you keep a few problem students from ruining an entire lesson?	○	○	○	○	○	○	○	○	○
To what extent can you provide an alternative explanation or example when students are confused?	○	○	○	○	○	○	○	○	○
How well can you respond to defiant students?	○	○	○	○	○	○	○	○	○
How much can you assist families in helping their children do well?	○	○	○	○	○	○	○	○	○

How well can you implement alternative strategies in the classroom?	○	○	○	○	○	○	○	○	○
How well can you provide appropriate challenges for very capable students?	○	○	○	○	○	○	○	○	○

Section 2: Knowledge of the Profession

Please indicate your opinion about each of the statements regarding the education profession.

	Strongly agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
I know the origins of the profession.	○	○	○	○	○	○	○
I am knowledgeable of the important events and milestones in the profession.	○	○	○	○	○	○	○
I am knowledgeable about ethical guidelines within the profession.	○	○	○	○	○	○	○
I am familiar with accreditation and certification organizations and their standards or requirements within the profession.	○	○	○	○	○	○	○
I am familiar with professional associations and their roles and accomplishments.	○	○	○	○	○	○	○
I am knowledgeable of the professional journals and their contents' focus and purposes.	○	○	○	○	○	○	○
I am able to distinguish between similarities and differences between the profession and other similar professions.	○	○	○	○	○	○	○

Section 3: Philosophy of the Profession

Please indicate your opinion about each of the statements regarding the education profession.

	Strongly agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
I am able to identify and understand the current problems and concerns of the profession.	○	○	○	○	○	○	○
Research and inquiry are an important part of the philosophy of the profession.	○	○	○	○	○	○	○
Assessment and evaluation are emphasized in the profession's philosophy.	○	○	○	○	○	○	○
I am able to distinguish the philosophy of the profession from the philosophies of other similar professions.	○	○	○	○	○	○	○

Section 4: Professional Roles and Expertise

Please indicate your opinion about each of the statements regarding the education profession.

	Strongly agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
I value the various roles one in the profession can hold.	○	○	○	○	○	○	○
I have the professional knowledge and practical skills required to successfully perform my roles.	○	○	○	○	○	○	○
I am confident that there will be positive outcomes of my work and services.	○	○	○	○	○	○	○
I am knowledgeable of ethical responsibilities and professional standards relevant to my roles.	○	○	○	○	○	○	○
I am familiar with which resources to refer to when I need professional help.	○	○	○	○	○	○	○
I consistently self-evaluate and self-reflect my effectiveness and performances.	○	○	○	○	○	○	○

Section 5: Attitude

Please indicate your opinion about each of the statements regarding the education profession.

	Strongly agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
The profession has a well-established body of knowledge.	○	○	○	○	○	○	○
The profession provides unique and valuable services to society.	○	○	○	○	○	○	○
I value the advancement and the future of the profession.	○	○	○	○	○	○	○
I believe the profession is different from other similar professions.	○	○	○	○	○	○	○
It bothers me to meet people who do not value the profession.	○	○	○	○	○	○	○
I recommend the profession to those who are searching for a new career.	○	○	○	○	○	○	○
I am comfortable having discussions about the role differences between the profession and other similar professions.	○	○	○	○	○	○	○

My personality and beliefs are well matched with the characteristics and values of the profession.	○	○	○	○	○	○	○
I am satisfied with my work and roles within the profession.	○	○	○	○	○	○	○
I have a solid work-life balance and feel alignment between the profession and my personal life.	○	○	○	○	○	○	○
I share my positive feelings regarding the profession when working with people in other fields.	○	○	○	○	○	○	○

Section 6: Engagement Behaviors

Please indicate your opinion about each of the statements regarding the education profession.

	Strongly agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
I have memberships within professional associations.	○	○	○	○	○	○	○
I actively engage in professional associations by participating in conferences and workshops every year.	○	○	○	○	○	○	○
I would like to be more involved in professional development activities.	○	○	○	○	○	○	○
I engage in certification/licensure renewal processes.	○	○	○	○	○	○	○
I have contributed to expanding my knowledge base of the profession by participating in research (eg. by being interviewed, taking surveys, etc.)	○	○	○	○	○	○	○
I have conducted research within the profession.	○	○	○	○	○	○	○
I have published magazine or journal articles within the profession.	○	○	○	○	○	○	○

I keep up with advancement within the profession by reading literature in the field.	○	○	○	○	○	○	○
I engage in or seek opportunities to serve in non-required leadership positions.	○	○	○	○	○	○	○
I educate the community and public about the profession.	○	○	○	○	○	○	○
I advocate for the profession by participating in activities associated with legislation, law, and policy on behalf of the profession.	○	○	○	○	○	○	○

Section 7: Professional Values

Please indicate your opinion about each of the statements regarding the education profession.

	Strongly agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
I seek feedback from professional peers as a form of professional development.	○	○	○	○	○	○	○
I regularly communicate with a mentor who is interested in my professional development.	○	○	○	○	○	○	○
I regularly communicate with a mentee who is interested in his/her professional development.	○	○	○	○	○	○	○
I keep in contact with other professionals through training and/or involvement in professional associations.	○	○	○	○	○	○	○
I keep involved in ongoing discussions with other professionals about identity and the vision of the profession.	○	○	○	○	○	○	○
I have identified methods of seeking advice within the profession.	○	○	○	○	○	○	○
I serve as a source of knowledge for others seeking advice within the profession.	○	○	○	○	○	○	○

Section 8: Open Ended Questions

What gender do you identify with?

_____

What university do you attend?

_____

What is your major?

_____

Which college or school is your degree program housed in?

- ○ Agriculture
- ○ Education
- ○ Other (please list) _____

In what subject area will you be certified to teach (content area)?

_____

Section 9: Thank You

Thank you for completing the self-efficacy and professional identity survey. Your responses will be submitted and you will be entered to win a $25 amazon gift card. Winners of the drawing will be contacted no later than February 28, 2018. Please enter your email to be eligible for the drawing.

Email: _____

Appendix B. Institution Review Board

UNIVERSITY OF ARKANSAS

Office of Research Compliance
Institutional Review Board

July 3, 2017

MEMORANDUM

TO:	Hailey Gates Kate Shoulders
FROM:	Ro Windwalker IRB Coordinator
RE:	New Protocol Approval
IRB Protocol #:	17-05-701
Protocol Title:	*Self-Efficacy and Professional Identity of Teaching Residents*
Review Type:	☒ EXEMPT ☐ EXPEDITED ☐ FULL IRB
Approved Project Period:	Start Date: 06/29/2017 Expiration Date: 06/28/2018

Your protocol has been approved by the IRB. Protocols are approved for a maximum period of one year. If you wish to continue the project past the approved project period (see above), you must submit a request, using the form *Continuing Review for IRB Approved Projects*, prior to the expiration date. This form is available from the IRB Coordinator or on the Research Compliance website (https://vpred.uark.edu/units/rscp/index.php). As a courtesy, you will be sent a reminder two months in advance of that date. However, failure to receive a reminder does not negate your obligation to make the request in sufficient time for review and approval. Federal regulations prohibit retroactive approval of continuation. Failure to receive approval to continue the project prior to the expiration date will result in Termination of the protocol approval. The IRB Coordinator can give you guidance on submission times.

This protocol has been approved for 1,000 participants. If you wish to make *any* modifications in the approved protocol, including enrolling more than this number, you must seek approval *prior to* implementing those changes. All modifications should be requested in writing (email is acceptable) and must provide sufficient detail to assess the impact of the change.

If you have questions or need any assistance from the IRB, please contact me at 109 MLKG Building, 5-2208, or irb@uark.edu.

109 MLKG • 1 University of Arkansas • Fayetteville, AR 72701-1201 • (479) 575-2208 • Fax (479) 575-6527 • Email irb@uark.edu
The University of Arkansas is an equal opportunity/affirmative action institution.

Appendix C. Initial Contact Letter

UNIVERSITY OF ARKANSAS
DALE BUMPERS COLLEGE
OF AGRICULTURAL, FOOD & LIFE SCIENCES

<Dr. Last>:

My name is Hailey Gates and I am a graduate student at the University of Arkansas. For my thesis, I am conducting a study regarding the self-efficacy and professional identity of teaching residents through a national survey of land grant universities. Participants in this study will be divided into two groups, agricultural education majors and other secondary education majors.

I would love to include your teaching residents who are anticipating their student teaching placement either this fall or spring in my study. It is my intention to work with you to establish contacts for both groups of students in order to make administration and collection of the surveys as simple as possible. The survey will be available for 9 weeks between the fall and spring semester and is intended to be taken by teaching residents just prior to beginning their student teaching placement. The survey takes approximately 30 minutes to complete and is available in paper and electronic form.

If your institution is willing to participate in this survey, please respond with the email and phone number of the individual who will be over the 1) agricultural education majors and 2) secondary education majors in the weeks leading up to their student teaching placement. The contact established for each group will be contacted with further instructions, a choice of receiving paper or electronic surveys, and a choice of when to receive their group's surveys.

Thank you for your time and commitment to furthering educational research. If you have any question about the study please contact me at hrgates@uark.edu or at 615-364-7713. I look forward to working with your institution.

Hailey Gates
Principal Researcher
hragtes@uark.edu

IRB #17-05-701
Approved: 08/25/2017

Appendix D. Pre-Notice Letter

UNIVERSITY OF ARKANSAS
DALE BUMPERS COLLEGE
OF AGRICULTURAL, FOOD & LIFE SCIENCES

<Dr. Last>:

Your students have been chosen to participate in a study regarding the self-efficacy and professional identity of teaching residents (student teachers). The study will be using a survey to collect data from teaching residents in a national study. Participants should have completed the majority of their degree program and are anticipating student teaching spring of 2018.

The purpose of the survey is to measure teaching residents' sense of self-efficacy and professional identity prior to student teaching and provide better insight for teacher education research. The survey will take approximately 30-40 minutes to complete. Once the survey is completed, participants will be entered to win a $25 Amazon gift card.

Students may complete the survey via paper copy or an electronic copy through Qualtrics.

- If you wish to have your students complete paper copies, please respond to this email with the appropriate mailing address and number of copies needed for eligible participants.

- If you wish to have your students complete the survey electronically, you may simply forward the Qualtircs link that will be provided next week or respond to this email with a list of student emails for eligible participants.

For your convenience, the survey will become available November 6th and remain open until January 28th. If you have any questions, please do not hesitate to ask!

Thank you for your time and cooperation. I look forward to receiving your responses.

Hailey Gates
Principal Researcher
hrgates@uark.edu

Appendix E. Instruction Letter

Dr. <Last>:

Thank you for having your students participate in this self-efficacy and professional identity survey. The survey should take approximately 30 minutes to complete. If you are having your students complete this survey electronically, please have them follow the link:

[link]

If you are having your students complete paper copies of the survey, please use the copies we have mailed you. If you need replacement or additional copies, please contact me at hrgates@uark.edu or 615-364-7713. Completed surveys can be mailed back in the provided packaging, or scanned and emailed.

All participants will be asked to provide an email at the end of the survey. Participants who complete the survey will be entered to win a $25 Amazon gift card and will be contacted through the email they provide.

If you are administering paper surveys, please read the following to your students prior to them taking the survey:

The survey you are about to take consists of three parts: (1) professional identity, (2) self-efficacy, and (3) personal information. You are not to include your name with this survey. At the end of the survey you will be asked to provide and email, this will only be used to contact you if you are the winner of a $25 Amazon gift card. The survey should take approximately 30 minutes to complete. Please answer the questions truthfully and to the best of your ability.

Please send completed surveys to:

Hailey Gates
hrgates@uark.edu
465 N Campus Drive
205 Agriculture Building
Fayetteville, Arkansas, 72701

Appendix F. Consent Form

UNIVERSITY OF ARKANSAS
DALE BUMPERS COLLEGE OF AGRICULTURAL, FOOD & LIFE SCIENCES

Self-Efficacy and Professional Identity: A Comparison of Agricultural Education and Secondary Education Teaching Residents

Principal Researcher: Hailey Gates

Dear Teaching Resident,
You have been selected to participate in a thesis research study to compare the self-efficacy and professional identity of agricultural education and secondary education teaching residents. The results of this study will be used to describe the self-efficacy and professional identity of teacher candidates around the country and make recommendations based on the comparisons. These results may not help you today, but will benefit future teaching residents.

WHAT YOU SHOULD KNOW ABOUT THE RESEARCH STUDY

Who is the Principal Researcher?
Hailey Gates, Masters Candidate
hrgates@uark.edu

What is the purpose of this research study?
The purpose of this study is to compare the self-efficacy and professional identity of agricultural education and secondary education teaching residents.

Who will participate in this study?
Agricultural education and secondary education teaching residents from 52 land-grant institutions.

What am I being asked to do?
You will be asked to complete a survey.

What are the possible risks or discomforts?
There are no anticipated risks if you should participate.

What are the possible benefits to this study?
Participants who complete the survey will be entered to win a $25 Amazon gift card. Other than that incentive, there are no anticipated benefits of participating in the study.

How long will the study last?
The survey will last approximately thirty minutes.

Will I receive compensation for my time and inconvenience if I choose to participate in this study?
Yes, those who participate will be entered to win a $25 Amazon gift card.

IRB #17-05-701
Approved: 06/29/2017
Expires: 06/28/2018

Will I have to pay for anything?
No, participants will not be required to pay for anything during the duration of the study.

What are the options if I do not want to be in the study?
If you do not want to have your data (which includes your survey responses) included in the study and/or you do not want to participate in the interview, you may refuse to participate. Also, you may refuse to participate at any time during the study.

How will my confidentiality be protected?
All information will be kept confidential to the extent allowed by law and University policy. Information will be locked in a secure office for safety. No identifying information will be reported at any future presentation or published in any future publication.

Will I know the results of the study?
At the conclusion of the study you will have the right to request feedback about the results. You may contact the principal researcher, Hailey Gates (hrgates@uark.edu).

What do I do if I have questions about the research study?
Principal Researcher: Hailey Gates (hrgates@uark.edu).
You may also contact the University of Arkansas Research Compliance office listed below if you have questions about your rights as a participant, or to discuss any concerns about, or problems with the research.

Ro Windwalker, CIP
Institutional Review Board Coordinator
Research Compliance
109 MLKG Building
Fayetteville, AR 72701-1201
479-575-2208
irb@uark.edu

I have read the above statement and have been able to ask questions and express concerns, which have been satisfactorily responded to by the investigator. I understand the purpose of the study as well as the potential benefits and risks that are involved. I understand that participation is voluntary. I understand that no rights have been waived by signing the consent form.

Name (Print)_____ Date_____

Name (Signed)_____

IRB #17-05-701
Approved: 06/29/2017
Expires: 06/28/2018