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Pioneering Spirit: Examining the Motives and Experiences of Non-SBAE Students Majoring in Agricultural Education

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Abstract

With the national shortage of school-based agricultural education (SBAE) teachers and subsequent shortage of skilled workers in food, agriculture, and natural resources careers, more expansive recruitment and retention efforts are needed. Traditionally, preservice teachers in agricultural education originate from within SBAE, yet, some non-SBAE students still find their way to the agricultural education major with a desire to become SBAE teachers. The purpose of this bounded single case study was to understand the lived experiences of non-SBAE high school students majoring in agricultural education; specifically, the motives for majoring in agricultural education and the unique challenges associated with it. Documents were collected and interviews and observations over the course of one year were utilized to gather and analyze data. Researchers identified four major themes emerging from the data: a) Non-SBAE students are motivated by altruistic, intrinsic, and extrinsic values (three subthemes); b) non-SBAE pre-service teachers face common and unique challenges (two subthemes); c) faculty support is critical for persistence in the major; and d) non-SBAE students approach their career with uncertainty and caution. Implications and recommendations related to recruitment of youth and retention of non-SBAE preservice agriculture teachers are discussed.

Keywords: agricultural education; career choice; major; Non-traditional students; SBAE

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Introduction and Need for the Study

The national shortage of school-based agricultural education teachers (SBAE) continues to be worrisome as agricultural education programs are forced to hire unqualified teachers to fill the open positions or shut down entirely (Smith et al., 2018). Data suggest that 24% of new hires in SBAE enter as non-licensed or alternatively licensed teachers (Smith et al., 2018). The lack of qualified SBAE teachers may result in fewer students prepared and motivated to seek a career in agriculture and STEM related fields where shortages of skilled workers already exist (Goecker et al., 2015).

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Solving the teacher shortage in SBAE is imperative to meet the scientific and professional agricultural workforce demands of this century. Better student recruitment and improved retention have been identified as solutions for solving the teacher shortage crisis. For years the primary pipeline of preservice teachers in agricultural education has been from within SBAE, despite recommendations to look beyond SBAE for a more diverse population of students (Lawver & Torres, 2012; Marx et al., 2017). While it seems there is little effort and few resources committed to attracting and recruiting students outside of SBAE, some still find their way to the agricultural education major and a desire to pursue a teaching career in agriculture. Yet, there is very little literature that exists to explain the experience of preservice agriculture teachers with no SBAE experience (henceforth referred to as non-SBAE preservice teachers) as they pursue their degree. Understanding the lived experiences of this unique population of students can provide insights for teacher education programs with implications for recruitment, retention, and program management and development to meet the needs of diverse groups of students.

Purpose and Research Questions

The purpose of this bounded single case study was to understand the lived experiences of non-SBAE high school students majoring in agricultural education. In order to accomplish this goal, the overall purpose was intentionally refined based on emerging issues in the case. Initially, we focused on the etic issues and primary question: What are the experiences of non-SBAE high school students as a result of majoring in agricultural education? However, after initial data collection and analysis, the following central questions emerged as the emic issues and guided the remainder of the study: 1) What are the motives of non-SBAE students to major in agricultural education? 2) What are the unique challenges and experiences of non-SBAE pre-service teachers as they pursue a career in agricultural education?

We aligned this research study with the National Research Agenda's Research Priority 3, which calls for research to explore effective practices in recruiting and supporting agricultural education teachers at all stages in their career as well as examining "strategies for recruiting diverse populations" (Stripling & Ricketts, 2016, p. 31). Findings from this research can have implications for teacher education programs to improve recruitment and retention efforts.

Literature Review and Theoretical Perspectives

We identified the theoretical frameworks for this study during the primary analytic process where emergent emic issues enabled us to refine our research questions and purpose (Creswell, 2013). These frameworks helped to inform the emergent findings but did not predetermine or dictate how we conducted the analysis (Guba & Lincoln, 2005). In order to answer both of the research questions, we utilized two separate theoretical frameworks in this study. To explore the motives of non-SBAE students to major in agricultural education, we utilized the Factors Influencing Teaching Choice (FIT-Choice) model (Watt & Richardson, 2007). To investigate the second research questions, the unique challenges of non-SBAE high school students majoring in agricultural education, we utilized the Geometric Model of Student Persistence and Achievement (Swail et al., 2003) as a theoretical perspective.

Motivations for Choosing Teaching as a Career

Research related to human motivation abounds but there is comparatively less research exploring motivation for teaching as a career (McLean et al., 2019; Watt & Richardson, 2007). Seminal works on the topic have established three main motivations for choosing a career in teaching which

include altruistic (Brookhart & Freeman, 1992), intrinsic (Ryan & Deci, 2000), and extrinsic (Ryan & Deci, 2000). The FIT-Choice model (Watt & Richardson, 2007) which can be mapped to the main constructs in the expectancy-value motivational theory (Eccles et al., 1983; Wigfield & Eccles, 2000), taps into the altruistic, intrinsic, and extrinsic motivations for choosing teaching as a career in the "values" component of the model. The FIT-Choice model is a comprehensive framework explaining why individuals choose teaching as a career and is divided into five primary factors: values, task perceptions, socialization influences, self-perceptions, and fallback career. Recently, this model was adapted to understand the factors influencing career choice in agricultural education (Lawver, 2009). Because this adapted model for agricultural education was based primarily on students enrolled in SBAE, Lawver (2009) recommended further studies that explored recruitment from outside of SBAE.

Values

Altruistic motivations refer to choosing a career because of service-oriented ideals. In the FIT-Choice model, Watt and Richardson (2007) categorize altruistic motivations as social utility value. Making a contribution to society, shaping the future of children or adolescents, enhance social equity, improving children's lives, interest in working with youth, rendering important service to humanity, being a role model for youth, and attaining personal fulfillment have been identified as altruistic motivations for choosing teaching as a career (Drudy et al., 2005; Heinz, 2013; Kyracou & Coulthard, 2000; Lortie, 1975; Manuel & Hughes, 2006; Richardson and Watt 2006).

Intrinsic motivations for teaching refer to doing an activity because of the inherent joy or satisfaction that is attained from doing it (Ryan & Deci, 2000). In the FIT-Choice model, Watt and Richardson (2007) categorize intrinsic motivations as intrinsic values. Intrinsic motivations, such as passion for teaching, love for the subject matter, enjoyment in teaching the subject matter, and opportunity to express creative abilities have been identified as motivating factors to pursue teaching as a career (Chesnut & Burley, 2015; Eren & Tezel, 2010; Younger et al., 2004). Both Altruistic and intrinsic motivations have been found as strong predictors for choosing teaching as a career (Brookhart & Freeman, 1992).

Extrinsic motivations for teaching refer to doing an activity in order to attain something in return, a definable outcome that is not inherent in the work itself. In the FIT-Choice model, Watt and Richardson (2007) categorize extrinsic motivations as personal utility value. Research has indicated that extrinsic motivations for choosing teaching as a career are status of the profession, levels of pay, benefits, holidays and vacation time, job security, and time compatibility (Lortie, 1975; Heinz 2015). Research also suggests college aged individuals tend to choose teaching as a career more readily for intrinsic and altruistic reasons while high school students are motivated more by extrinsic factors such as salary and job conditions (Han et al., 2018). In agricultural education, literature suggests barriers to entrance into the agriculture teaching profession are extrinsic motivators such as family responsibilities and relationships, desire to live in a certain area, and unwillingness to move away (Rocca & Washburn, 2008). Harms & Knobloch (2005) identified that students were motivated to teach agriculture because of the salary and benefits it provided as well as the opportunities for advancement. Vincent et al. (2012) found students of color were motivated to major in agricultural education because of the perception of financial stability it provided.

Task Perceptions

In the FIT-Choice model, task perceptions are divided into both task demand factors and task return factors. According to Watt and Richardson (2007), task demand factors are the perceptions that teaching is a highly technical and demanding career requiring specialized skill and knowledge, while task return refers to perceptions that teachers are well-respected, valued by society, and are

compensated well for their labors. Task demand and task return are opposing factors contributing to one's decision to teach. Because teaching agriculture is time-consuming and demanding (Sorensen et al., 2017; Torres et al., 2008), some individuals may choose other career options that are more conducive to their career goals and values. Concerns noted in the literature suggest preservice teachers are worried about their own abilities to balance personal and professional responsibilities, manage a program, and develop community and administrative support (Stair et al., 2012). Conversely, as Watt and Richardson's (2007) model would suggest, individuals might be attracted to agricultural education as a career because of the respect an agriculture teacher garners within a community or because they perceive agriculture teachers to be compensated well for the work they do.

Socialization Influences

Socialization factors are described as previous teaching and learning experiences as well as individuals, who may influence or dissuade another from teaching. A variety of studies across the world have identified students' positive prior teaching and learning experiences as a positive influence on their decisions to become teachers (Heinz, 2013; Lortie, 1975; Watt & Richardson, 2007; Younger et al., 2004). Key people such as family, friends, and former teachers have also been identified as primary influences on choosing a career in teaching (Drudy et al., 2005; Reid & Caudwell, 1997). Family members have been found to have the greatest influence on teaching career choice especially when a close relative is in the teaching profession (Drudy et al., 2005). Studies identified student teachers' prior teaching and learning experiences as a positive influence on their decisions to become teachers.

School clubs, teams, and extracurricular activities set the stage for student social interactions and socialization influences. The National FFA Organization (i.e., FFA) is directly linked with SBAE with more than 700,000 FFA members enrolled in SBAE courses and more than 13,000 FFA advisors across the country (National FFA Organization, 2020). Studies have shown that students who were actively involved and had positive experiences in FFA and their agricultural education programs were more likely to choose agricultural education as a career (Cole, 1984; Ingram et al., 2018).

Self-Perceptions

An individual's perceptions of their own ability to teach is referred to as self-perceptions in the FIT-Choice model (Watt & Richardson, 2007). Studies have shown that an individual's beliefs about their own teaching ability proves to be one of the most influential factors on their career choice as a teacher (Heinz, 2013; Watt & Richardson, 2008). Studies also suggest that as one's self-efficacy and perceived pedagogical knowledge in teaching increases, so does their intrinsic motivation to teach (Konig & Rothland, 2012).

Fallback Career

Watt and Richardson (2007) describe the fallback career as "the possibility of people not so much choosing teaching but defaulting into it" (p. 175). With the shortage of teachers in agricultural education, many positions must be filled by emergency or alternatively certified teachers (Smith et al., 2018). Although there is little research on the topic, it is likely a number of those teachers entered teaching as a fallback career.

Persistence, Achievement, and the College Student Experience

The Geometric Model of Student Persistence and Achievement (Swail et al., 2003) is a theoretical framework describing the factors contributing to college students' persistence and achievement in college. This framework is appropriate as a lens for our second research question

because it describes the student experience and the challenges and supports related to that overall experience. The model is based on a combination of three other theoretical models and theories which describe student attrition in higher education. These models include Tinto's Attrition Model (Tinto, 1975), Bean's Synthetic Model (Bean & Metzner, 1985), and Anderson's Force Field analysis (Anderson, 1985). The purpose of this geometric model is "to provide a user-friendly method for discussion and to focus on the cognitive and social attributes that the student brings to campus, and the institutional role in the student experience" (Swail et al., 2003, p. 76). Because this model is applicable to a wide range of students it enables us to utilize it as we examine the experiences of non-SBAE pre-service teachers.

The geometric model consists of three factors that contribute to a student's experience in higher education: cognitive, social, and institutional. Cognitive factors are those characteristics that shape a student's academic abilities. Cognitive factors include academic rigor, content knowledge, aptitude, critical thinking ability, study ability, time management skills, and decision-making skills. Social factors relate to how social influences impact a student's persistence and performance in higher education. These factors can include parental and peer support, career goals, and the ability to cope with social situations. Institutional factors relate to how the university contributes to the persistence of its students, and its ability to provide support to all students. These factors might include course content and availability, instruction, mentoring, and career counseling. Each of the three factors in the model individually support student achievement and persistence, but they also interact with one another. For example, a university can provide support programs (institutional factors) such as tutoring that support a student's cognitive abilities. When these three factors interact in such a way that students persist in their university programs, they are said to be in equilibrium (Swail et al., 2003). This model is useful for this study as focus can be shifted to and from the institution, providing a context for understanding how programs within institutions (e.g., agricultural education major) can support or cause challenges for students cognitively and socially.

College years have been found to be one of the most stressful periods of a person's life (Liu et al., 2018). As a result, many students drop out of college before completing their degree. Literature suggests inadequate preparation for degree programs in high school, the lack of financial resources to pay for college, and feelings of social isolation are challenges that contribute to one's lack of persistence in a degree program (Astin, 1993; Brown & Campbell, 2009; Hurtado et al., 2007; Santos & Reigadas, 2002; Seymour & Hewitt, 1997). Studies also suggest that institutional factors, such as faculty mentoring and financial aid awards can improve self-efficacy, achievement, and retention among college students (Slovacek et al., 2011).

While there is a dearth of literature explaining the experience of preservice agriculture teachers with no SBAE experience, this study seeks to draw from literature outside of agricultural education and add to the existing agricultural education literature base by exploring the lived experiences of this unique population. Understanding these students' motives for pursuing a career as an SBAE teacher and exploring the challenges they face in their career journey can be of great worth to the profession in guiding recruitment, retention, and management of SBAE pre-service teacher preparation programs.

Methods

Research Design

This qualitative study was an intrinsic bounded single case study (Stake, 1995), in which we sought to better understand the lived experiences of non-SBAE high school students majoring in agricultural education. We were interested in studying the "why" and the "what" of this case (Stake, 1995), specifically: Why do non-SBAE preservice teachers choose to major in agricultural education?

And what unique challenges do non-SBAE preservice teachers experience while pursuing a career in agricultural education? This case study design allowed us to examine non-SBAE high school students' motives as well as their unique challenges while pursuing a career in agricultural education.

Two of the three researchers had taught high school agriculture and were actively involved as advisors of the FFA. The other researcher was an undergraduate student in the agricultural education major. One of the researchers had gone through a traditional SBAE program as a student, while the other two had not, and discovered SBAE as a career option while in college. Throughout the study, we acknowledged our biases and multiple realities associated with our prior experiences and the experiences of the participants.

Our epistemology was rooted in the constructivist paradigm. By taking the constructivist approach with attention to the idea of openness and multiple realities, we began this study with the etic issue (e.g., what are the experiences of non-SBAE high school students as a result of majoring in agricultural education?), and then through data collection and analysis, we refined the research question to reflect the emerging emic issues to guide the remainder of the study (e.g., what are the motives of non-SBAE students to major in agricultural education? What are the unique challenges that non-SBAE pre-service teachers face as they pursue a career in agricultural education?).

Description of the Case

The case of interest was the cohort of students majoring in agricultural education at Western University (pseudonym). We attempted to include all students in the major who had never taken agriculture classes in high school. This group of students was purposefully selected because of their unique background experiences related to SBAE and the relatively large proportion of them (i.e., about 15%) in the agricultural education major. Eight undergraduate students who had not taken any classes in high school in SBAE were selected to participate. Each of the eight students had declared agricultural education as their major. Six of the participants were male while two were female. Six of the participants were White, while two were of different ethnic minority groups. At the time of the study, six of the participants were between the ages of 19-24 while two were over the age of 25 and were both considered non-traditional students. When the study began, one participant was a freshman, two were sophomores, three were juniors, and two were seniors preparing to student teach. Five of the participants had changed their major to agricultural education after first seeking degrees in other disciplines, and one was dual majoring. Three of the participants came from a traditional production agriculture background while the others came from suburban or urban backgrounds. Four of the participants attended high school where an agriculture program existed while the other half did not. Each of the four participants who attended a high school where there was an agriculture program, indicated they were either too involved in other things or were not interested because their friend group was elsewhere. At the time of the study, all eight participants intended to enter the classroom as agriculture teachers upon completion of their degree.

Western University offers a four-year, 120 credit agricultural education degree program with nearly 100 students enrolled when the study began. On average, about 90% of the students majoring in agricultural education had come from SBAE backgrounds, with this trend being consistent over the past ten years. Students majoring in agricultural education at Western University generally focus their first two years in technical agriculture courses (e.g., 53 credits) and general education courses (e.g., 22 credits) and then focus their final two years in teaching-related courses (e.g., 45 credits). For the technical courses, students are required to take between three and nine credits in each of the following areas: animal sciences, plant sciences, agricultural systems, agricultural business, and natural resources. Students are encouraged to take one introductory course to agricultural education during their freshman year that explores agricultural education as a career option. All of the students in this study had taken

that introduction course. During the junior and senior years leading up to student teaching, students are required to complete clinical observations in different SBAE programs in the state. During the final semester of coursework, students complete their student teaching practicum.

As a participating state in the National Teach Ag Campaign, many resources and efforts are used to target high school students, most of which involve the faculty or students in the agricultural education major at the university. A Teach-Ag workshop, Teach-Ag booth at state convention, hosting the Agricultural Education Career Development Event at the university, are a few of the recruitment activities focused on high school students. It is important to note that little to no recruitment efforts are targeted at youth not in SBAE programs. At the university, there are very few recruitment activities in agricultural education targeting college students. Those that do occur, typically involve the Collegiate FFA club or Agricultural Education club activities with invitations to students outside of the major to attend.

Data Sources and Collection

For this case study, we collected three different sources of data which included collecting documents, conducting field observations, and conducting in-depth interviews with each of the eight participants over the course of one year. Interviews served as the main data point for the themes, with observations and documents serving secondarily to provide us with a more comprehensive view of the lived experiences of the participants, and to help facilitate data triangulation.

Two separate focus-group interviews were conducted with the eight participants, both of which lasted for approximately 75 minutes. We audio-recorded and transcribed the focus group interviews verbatim. We began with the general research question (etic issue) of "what are the experiences of non-SBAE high school students as a result of majoring in agricultural education?" After the first focus-group interview was conducted, we were able to do what Stake (1995) referred to as progressive focusing, which is to refine the research questions to reflect the emic issues. With new research questions guiding the study (emic issues), another focus group interview (shortly after the first focus group interview) and at least one other one-on-one interview was conducted with each participant. From the focus group and the one-on-one interviews, data were collected in either oral (semi-structured face to face) or written format (structured email), with all data finally being transcribed into written formats for analysis.

The one-on-one interviews and observations took place over the course of one year and in various locations. We made observations in university classes, during agricultural education and club activities on campus (e.g., socials and professional development events), during state FFA or agricultural education events (e.g., state FFA convention and CDE judging opportunities), and during the student teaching or clinical teaching practicums. From these observations, we recorded and logged field notes.

We analyzed five different types of documents, including students' clinical experience packets, student teaching handbook documents, student teaching weekly written reflections, formal and informal evaluations of students during clinical and student teaching practicums from cooperating teachers, and students' own teaching philosophies. The documents were not analyzed for thematic content, but they did provide us with evidence to support conclusions from the other data sources (i.e., observations and interviews).

Data Analysis

We used constant comparative analysis to transform the raw data from this study into significant findings (Glaser & Strauss, 1967). The goal of data analysis was to identify patterns in the data and discover relationships between ideas and concepts related to the research questions. The data collected were analyzed and coded for thematic content using coding protocols outlined by Auerbach and Silverstein (2003). Two separate researchers performed the coding process with constant checks for accuracy and reliability in coding.

Three rounds of analysis were conducted to transform the data into themes and sub-themes. The first round consisted of reading through and open-coding the data from the focus group interviews to help us understand the phenomena of the case. During this round, we analyzed the data separately and then collectively we were able to identify the emic issues that emerged from the original etic issue. Ten themes emerged from this first round of analysis with two major issues being identified for further investigation. Round two of data analysis began after all of the data were collected. We read through all of the data and utilized our research questions to look for evidence of motives to major in agricultural education and challenges associated with it. Ten themes again emerged from this phase of data analysis. The third round consisted of identifying common themes and narrowing them down into common categories. Collectively, we agreed upon five categories during round three. Round four consisted of analyzing the entire data set again to refine the themes, identify sub-themes, and review them for accuracy. In the end, four themes and five subthemes emerged from the data.

Trustworthiness and Ethical Research

We established rigor and trustworthiness with a focus on credibility, transferability, dependability, and confirmability (Harrison et al., 2001). To establish credibility and triangulation of various data sources, we utilized peer debriefing. Through the use of rich descriptions of the participants and the case, we established transferability. Dependability and confirmability were established through triangulation, confirmation of themes and sub-themes by researchers, and maintaining an audit trail (Denzin & Lincoln, 2011). While this study may have the potential to be transferable to other settings, we make no attempt to generalize beyond the eight participants of this study. This research study was approved by the institutional review board of the three researchers before any data were collected.

Findings

This study aimed at understanding why non-SBAE preservice teachers choose to major in agricultural education and the lived experiences and challenges associated with pursuing a career in agricultural education. Four major themes emerged from the data: a) non-SBAE students are motivated by altruistic, intrinsic, and extrinsic values (three subthemes); b) non-SBAE pre-service teachers face common and unique challenges (two subthemes); c) faculty support is critical for persistence in the major; and d) non-SBAE students approach their career with uncertainty and caution. To maintain confidentiality, the university and the student participants in this study were represented using pseudonyms.

Theme 1: Non-SBAE Students Are Motivated By Altruistic, Intrinsic, and Extrinsic Values

Participants in this study discussed why they chose to pursue agricultural education as a career. A variety of factors seemed to influence the career decisions of these non-SBAE pre-service teachers. Participants spoke little of extrinsic rewards like salary or prestige and focused primarily on the intrinsic value derived from teaching. When asked about why they chose agricultural education as a career the

participants mostly talked about three things: their desire to make a difference, their passion for enjoyment with agriculture, and alignment with their lifestyle and family goals.

Subtheme 1A: Altruistic Values

The participants of this study perceive their career path in a very altruistic lens, focusing less on personal rewards and more on making a difference in the world. Amy stated,

> At first, I was focused on finding a major that would get me rich someday, but nothing felt right, until I stumbled upon this option where I can truly make a difference. Now I've found what I really want to do, not just what others think I should I do.

Upon completion of student teaching, Bill stated, "I don't know that it will ever get old to me. Helping people understand something is a fun experience. Helping people in general is fun and rewarding." Many of the participants mentioned their desire to inspire, impact others, and make a difference through their career. Chuck said, "I do want to be an influence…I want to be that teacher through agricultural education that could inspire kids." Julie stated, "Being able to make a difference and impact others is what made me want to become a teacher. It is convenient that I can marry my passion for agriculture with helping others."

Subtheme 1B: Intrinsic Values

Many participants spoke of the joy they receive when engaging in agricultural activities and the connection to agricultural education as a career. While observing participants in various settings, it became clear that the participants possessed a passion for specific areas of agriculture, and they wanted to share that with others. Brian, for example, discussed his experiences with urban and small-acreage farming and his desire for teaching that to others. He created lessons that he taught to his students during student teaching about urban agriculture and small-acreage farming. Although some of the participants did not grow up around production agriculture, they discussed how their experiences in life helped them develop their passion for agriculture. Edward stated,

> Without agriculture, we are nothing. I've been around the world and seen a lot of things in the military and I've come to realize how important agriculture is for our survival. I feel it is my calling in life to teach youth about it. I'm excited to do it.

Julie stated,

> My grandparents both came from agriculture backgrounds. I loved going to visit them and loved working with the animals. Now I want to share that with others who grew up in my situation. That is why I want to do this career.

Subtheme 1C: Extrinsic Values

Participants realized that a teaching career not only could be rewarding intrinsically, but it also matched their lifestyle and career and family goals. Participants mentioned their desire to have a career where they could still spend time with their future families and enjoy their hobbies. The participants already envisioned the type of lifestyle they wanted and saw how teaching agriculture could fit that lifestyle. When talking about why he chose agricultural education as a career, Brian stated, "I thought it would fit the kind of lifestyle that I wanted in the future, so I made the jump." Adam stated,

> It seems like a good family job, one that would allow me to be home on weekends and holidays and also would allow me to involve my family in activities that we all like. I know there could be issues with work and life balance during busy times of the year, but I think it will be a good career overall.

Theme 2: Non-SBAE Pre-Service Teachers Face Common and Unique Challenges

The participants expressed concerns and challenges they had faced as they pursued their career in agricultural education. Some of their concerns seemed to be common concerns most preservice teachers would have (e.g., perceived lack of content knowledge), while others seemed to be unique to non-SBAE pre-service teachers (e.g., lack of FFA knowledge and experience created a diminished sense of belonging and feeling of inadequacy). Despite the challenges expressed by the participants, they all talked about a solid support system that bolstered their resilience in their career path.

Subtheme 2A: Perceived Lack of Content Knowledge

Participants expressed a lack of knowledge in agriculture and conveyed feelings of inadequacy and fear about teaching agriculture content to students. Jim stated, "I would have to teach something that I don't have a very big depth of knowledge about, it's a scary thought." Some of the participants communicated feeling confident about teaching topics in some areas of agriculture, but shared concerns about understanding and teaching in all areas. Julie mentioned her fear of not being able to answer the students' questions and not being seen as credible. She mentioned,

> I am going to look like a deer in the headlights, I'm going to look like a freak up there…I love hands on learning, but how do I demonstrate it with confidence? I would love to be able to demonstrate it and look confident and not lose credibility.

The participants seemed overwhelmed with the breadth of knowledge they felt they needed mastery of in order to teach agriculture. Adam, a pre-service teacher who grew up in a suburban household said, "I didn't realize there was so many aspects to agriculture…if I had known that, I would have steered myself away from it because I didn't realize that there was so much expected."

Subtheme 2B: Lack of FFA Knowledge and Experience Creates A Diminished Sense of Belonging and Feeling of Inadequacy

Participants expressed great concern about their knowledge of FFA and their ability to be an FFA advisor. To the participants, FFA was an extraneous concept. Chuck said, "I feel that I have to really learn and study the concepts and components of FFA, while it comes natural to other students; the FFA… feels foreign to me." Brian said, "It feels so foreign to me, I really don't understand it, I really don't grasp how it all works…it feels cultish to me." Brian also mentioned his lack of FFA experience was "a significant barrier" in becoming a teacher. Bill shared his frustration with not knowing how much FFA was a part of agricultural education when he stated,

> So many parts to agricultural education, how do you recruit, how do you remember how to run meetings, how do you remember how to submit paperwork to go to competitions, how do you know you are ready? A lot of the students already expect to know what to do in those situations, I don't.

The lack of previous experiences in FFA and perceived lack of familiarity with FFA caused much social anxiety among the participants. As a result, participants expressed inadequacies in their ability to be an FFA advisor and a lack of sense of belonging in the agricultural education major. The participants discussed how their lack of participation in FFA as high school students had made it very challenging to socially connect with their peers. Participants felt there was a special culture among the other students, which because of their lack of FFA experiences, excluded them from being part of that culture. Brian stated, "It's hard to get into the group…it's like an out-group I'm a part of." Jim stated,

> There is a lot of culture with FFA. We have a lot of students from different schools that have never met, but they bring the same cultural nuances from FFA…it's intimidating to be an outsider looking in and figuring it all out without the previous experiences in FFA.

Edward also discussed his frustration with being an outsider when he said,

> I am like the perennial outsider, I am not part of the clique, especially taking classes here at the university; I orbit around, but I am not part of what is going on. I am

> definitely engaged in the classes since I am part of the make-up of that class, but not having those backgrounds give me very much an outsider's standpoint.

The lack of FFA knowledge and experiences as well as the sense of belonging led some students to withdraw from activities. Chuck said,

> I am very hesitant to participate with other students in collegiate FFA or other extra-curricular activities like areas judging events because I don't know what is going on, and I don't want to hold activities back due to my many questions. I don't feel like I can contribute in the program and volunteer because I don't know anything about FFA

Theme 3: Faculty Support Is Critical for Persistence in the Major

Despite the challenges expressed by non-SBAE preservice teachers, they continually reverted back to discussing how they persevere in the major. The majority of participants talked about the university faculty and friends at the university who served as a strong support system to help them overcome their challenges. Through observations and interviews over the course of a year, it was evident that these non-SBAE preservice teachers had developed a spirit of resilience towards being successful agriculture teachers. Julie stated, "I feel that because I'm a female and also because I didn't come from an agriculture background, I have two strikes against me. But with help from my teachers and supportive friends, I will be successful." During his student teaching experience Bill stated,

> This has been a learning curve to say the least, but I am trudging along. It is exhausting, but I feel I have reached a point where I am beginning to feel comfortable and I'm finding my groove. My friends and family are a big reason I'm feeling success now.

The resilience showed by the participants seemed to stem from the encouragement they received from peers and faculty at the university. After student teaching, Adam stated,

> This was the most difficult thing I've accomplished, but thanks to [faculty in agricultural education], they were patient with me and kept telling me I could do it, I was able to be successful in student teaching and I think I've learned how to be an FFA advisor and agriculture teacher.

Julie, Amy, Chuck, and Edward mentioned how the faculty members were always available to help students and were always encouraging, which helped relieve their anxiety and keep them focused on the end goal. Amy stated, "They treated me very well, they have been awesome to me. The faculty tells me that school is more important, and we will do what we can to help you succeed." Chuck stated, "If it wasn't for the professors, I wouldn't be here getting ready to student teach because I would have dropped this major a long time ago."

Theme 4: Non-SBAE Students Approach Their Career with Uncertainty and Caution

For most of the participants in this study, a career in agricultural education was not what they envisioned when they first entered college. Because of various experiences and influencers, all of the participants in this study had decided on agricultural education as their major with full intentions to teach agriculture in high school settings. Yet, because of their lack of experience and uncertainty with school-based agricultural education, they seemed to approach their career decision with apprehension. Each one of the eight participants in the study mentioned other career options they had if teaching agriculture didn't work out. Julie, the participant who was dual majoring, said, "I know there is another job available for me in healthcare if I decide I can't do this or don't want to do it anymore." Although the participants were optimistic about their ability to become successful agriculture teachers, they seemed to have a fallback career ready to go in case it did not work out. Brian stated, "I am not scared because I can go back home and ranch and also teach science. But I want to see if this agriculture teacher and FFA advisor thing works first." Two of the participants discussed their desire to go back for more schooling and get advanced degrees. Adam, before student teaching stated, "I want to eventually get my PhD. It would be great if I could get it while teaching agriculture, but if that doesn't

work out, I have this other thing I can do." Interestingly, as the participants engaged more with high school students through their clinical and student teaching experiences, their confidence in their career choice grew. After student teaching, Adam said, "I still want to get my PhD, but now I know it will be in agricultural education." Edward stated, "This teaching this is harder than I expected, but it is also more rewarding than I expected. I wasn't sure at first, but now I can see myself doing this for a long time into the future." Bill mentioned, "I'm glad I stuck with this career. I was so nervous about student teaching, but now I know I can be successful, and I don't need to worry about looking for another career."

Conclusions and Recommendations

We explored the motivations, experiences, and challenges of non-SBAE pre-service teachers pursuing a career in agricultural education in this case study. We acknowledge this case study is limited in scope because of the small number of participants, limiting the generalizability of the findings (Maxwell, 2005). Results from this study yielded four primary themes with five total sub-themes. The following paragraphs summarize themes and connect them to previous research. Recommendations for practice and research are also included as they pertain to each theme.

Non-SBAE preservice teachers were motivated to pursue a career in agricultural education because of their desire to make a difference, their joy and passion for agriculture, and the perception that teaching agriculture could align with their goals and lifestyle. These findings are supported in other studies in agricultural education among students who did participate in agricultural education (Ingram et al., 2018), which suggests non-SBAE pre-service teachers are similar to SBAE students in their motivation behind pursuing agricultural education as a career. The fact that most agricultural education majors, regardless of background share the same desire to make a difference in the lives of students, are passionate about agriculture, and are desirous for a career that aligns with their family goals and lifestyle has implications for recruitment of youth both inside and outside of SBAE to become agriculture teachers. In 4-H and other youth organizations, especially where agriculture, food, and natural resources topics are the context for learning and development, youth that are altruistic and desire a career that aligns to family-oriented goals would be the type of student to recruit.

We found that non-SBAE preservice teachers have a desire to make a difference in the world and the lives of youth, which is described in the FIT-Choice model (Watt & Richardson, 2007) as social utility value. These findings are consistent with other research in agricultural education in which working with youth and making a social contribution are important motivators for pursuing a career in agricultural education (Lawver & Torres, 2011; Lawver & Torres, 2012). Research outside of agricultural education has shown that individuals interested in teaching as a career tend to be altruistic (Kyracou & Coulthard, 2000; Lortie, 1975; Reid & Caudwell, 1997). Participants in this study indicated they were pursuing a career in agricultural education because of the joy and passion that comes from working in agriculture. This finding is consistent with the intrinsic value component of the FIT-Choice model (Watt & Richardson, 2007). Non-SBAE pre-service teachers are intrinsically motivated to pursue agricultural education because of the opportunity it provides them to interact with something they enjoy and are passionate about, which is agriculture. Non-SBAE pre-service teachers felt that teaching agriculture aligned with their lifestyle and family goals, which is described in the FIT-Choice model (Watt & Richardson, 2007) as personal utility value. Highlighting the idea that teaching agriculture is an important (social value), family-friendly (personal value) career that is highly rewarding (intrinsic value) should be main points of conversation when discussing agricultural education to youth as a potential career option.

Non-SBAE pre-service agriculture teachers encounter challenges, which included a perceived lack of agricultural content knowledge; and a diminished sense of belonging and feeling of inadequacy

because of their lack of FFA knowledge and experiences. Cognitively, participants feared they did not know enough about agriculture to teach it to students. This perceived lack of knowledge is likely not unique to only non-SBAE pre-service teachers. Some evidence suggests that pre-service agriculture teachers, regardless of SBAE background, have low self-efficacy towards teaching technical agriculture content (McKim & Velez, 2017; Sorensen et al., 2018).

Content knowledge is an important force related to cognitive factors in the Geometric Model of Student Persistence and Achievement (Swail et al., 2003). As such, students who feel they lack the content knowledge in the major to be successful are less likely to be retained in the major. SBAE is unique because of the wide breadth of content knowledge teachers might be expected to teach, which is likely overwhelming for students, especially those with little agricultural background. Assisting non-SBAE pre-service teachers to realize they are not alone in their feelings of inadequacy to teach agricultural content would likely bolster their self-confidence and sense of belonging.

While other pre-service teachers often pursue a career in agricultural education because of their FFA experience (Ingram et al., 2018), pre-service teachers in this study considered changing majors because of FFA. Participants expressed great concern about their perceived lack of knowledge and ability to advise an FFA chapter. Although discouraging, this finding is reasonable due to un-relatable experiences. Teachers having never taught a specific subject before might still relate to classroom and lab instruction because of their experience as a student in a classroom. In contrast, the participants in this study had no lived experiences from which to draw upon as a reference for what to expect as an FFA advisor. Students major in and remain in disciplines they can relate to.

Because of the lack of experience with FFA, participants felt like outsiders. According to the geometric model (Swail et al., 2003), peer influences play a significant role in persistence of college students in their major and in college. Maslow (1943) described that before learning could occur, a person's basic needs, such as acceptance and a sense of belonging must be met. If agriculture teacher preparation programs aim to retain non-SBAE students, a greater sense of belonging must be achieved. How can teacher preparation programs be more inclusive and create a culture where non-SBAE students feel included? Perhaps peer mentoring or involvement in agricultural education university clubs or organizations may positively increase students' sense of belonging.

As teacher education programs seek to be more inclusive and embrace diversity, we posit that diversity does not only apply to ethnicity or gender, but also diversity of background and experiences. Providing pre-service teachers with authentic FFA advisor experiences, such as judging FFA events or shadowing FFA advisors early on in their college career can be beneficial. The challenge is creating a culture where all students regardless of their background in FFA can feel confident in their ability to engage in such activities. Many of the participants in this study had not started their student teaching practicum when the study began, however, by the end of the study, observations and interview data seem to suggest that this culminating experience in their degree program built their confidence and solidified their commitment to pursuing a career in agricultural education.

The Geometric Model of Student Persistence and Achievement (Swail et al., 2003) suggests cognitive, social, and institutional factors all contribute to the overall student experience leading to success and retention. Despite the unique challenges of the participants in this study, supportive faculty members seemed to be a critical component of student persistence in the major. As a result of these findings, we propose university faculty and administrators who work closely with agricultural education majors can play a critical role in positively influencing and encouraging students, especially non-SABE students. Our findings suggest the important nature of faculty-student relationships in student retention among non-SBAE preservice teachers.

Based on the findings of this study, we suggest the following recommendations for practice: 1) Current SBAE teachers, alumni, parents, and students should reach out to the various youth organizations within their communities to teach about SBAE as a career opportunity; 2) when discussing agricultural education to youth as a potential career option, recruiters should emphasize that teaching agriculture is an important, family-friendly career that is highly rewarding; 3) teacher preparation programs should evaluate their culture of inclusiveness, reviewing curriculum and seeking to discover any unintentional biases that may disadvantage non-SBAE students; 4) teacher educators should continue to provide pre-service teachers with as many authentic FFA experiences as possible before student teaching; 5) teacher educators should carefully consider placing non-SBAE pre-service teachers with SBAE teachers who have a strong FFA program and who can help increase the confidence in students' ability to advise an FFA chapter, yet not overwhelm them with unrealistic expectations; 6) teacher educators should identify students early on with non-traditional backgrounds and provide added support and encouragement; and 7) institutions should work to create a social climate where students without SBAE or FFA backgrounds feel more of a sense of belonging.

We recommend similar research in other states should be conducted with non-SBAE pre-service agriculture teachers to increase the generalizability of these findings. If large enough samples can be obtained, quantitative research should be conducted to determine differences among SBAE and non-SBAE pre-service agriculture teachers in attitudes and perceptions regarding sense of belonging, perceptions of FFA, self-efficacy, and career commitment. Research should also be conducted to examine differences in self-efficacy across both groups of SBAE and non-SBAE pre-service agriculture teachers and across specific content areas within agriculture.

The participants of this study will enter the agricultural education profession as pioneers in their own right, much like the female pioneers of this profession a half century ago. Without having any experience to draw from, non-SBAE teachers may face challenges, but they may also innovate and help transform the profession for the better because of it. In this current era when the agricultural education community is seeking a more inclusive and diverse approach, we echo the recommendations from other researchers and urge stakeholders responsible for recruitment of agricultural education students to continue seeking other sources beyond SBAE programs (Lawver & Torres, 2012; Marx et al., 2017). In turn, we are hopeful we can successfully begin to ameliorate the agriculture teacher shortage condition in this country.

References

Anderson, E. (1985). *Forces influencing student persistence and achievement*. In L. Noel, R. S. Levitze, and D. Saluri (Eds.), Increasing student retention (pp. 44–61). Jossey-Bass.

Astin, A. W. (1993). *What matters in college: Four critical years revisited.* Jossey Bass.

Auerbach, C., & Silverstein, L. B. (2003). *Qualitative data: An introduction to coding and analysis*. NYU press.

Bean, J. P., & Metzner, B. S. (1985). A conceptual mode of nontraditional undergraduate student attrition. *Review of Educational Research, 55*, 485-540. https://doi.org/10.3102/00346543055004485

Brookhart, S. M., & Freeman, D. J. (1992). Characteristics of entering teacher candidates. *Review of Educational Research, 62*, 37–60. https://doi.org/10.3102/00346543062001037

Brown, R., & Campbell, D. M. (2009). Recent trends in preparing ethnic minorities for careers in math and science. *Journal of Hispanic Higher Education, 8*(2), 225–241. https://doi.org/10.1177/1538192708326392

Chesnut, S. R., & Burley, H. (2015). Self-efficacy as a predictor of commitment to the teaching profession: A meta-analysis. *Educational Research Review, 15*(1), 1-16. https://doi.org/10.1016/j.edurev.2015.02.001

Cole, L. (1984). Oregon vocational agriculture teacher placement and retention factors. *The Journal of the American Association of Teacher Educators in Agriculture*, *25*(3), 2-12. https://doi.org/10.5032/jaatea.1984.03002

Creswell, J. W. (2013). *Research design: Qualitative, quantitative, and mixed methods approaches.* SAGE Publications, Inc.

Denzin, N. K., & Lincoln, Y. S. (2011). *The SAGE handbook of qualitative research.* Sage Publications, Inc.

Drudy, S. M., Woods, M., & O'Flynn, J. (2005). *Men and the classroom: Gender imbalances in teaching*. Routledge.

Eccles, J. S., Adler, T. F., Futterman, R., Goff, S. B., Kaczala, C. M, Meece, J. L. & Midgley, C. (1983). Expectancies, values and academic behaviors. In J. T. Spence (Ed.), *Achievement and achievement motives* (pp. 75-146). Freeman.

Eren, A., & Tezel, K. V. (2010). Factors influencing teaching choice, professional plans about teaching, and future time perspective: A mediational analysis. *Teaching and Teacher Education, 26*(7), 1416-1428. https://doi.org/10.1016/j.tate.2010.05.001

Glaser, B. G., & Strauss, A. (1967). *Discovery of grounded theory: Strategies for qualitative research*. Aldine, Transaction.

Goecker, A. D., Smith, E., Fernandez, M. J., Ali, R., & Theller, R. (2015), *Employment opportunities for college graduates in the food, renewable energy, and the environment 2015-2020*. United States Department of Agriculture and Purdue University. https://www.purdue.edu/usda/employment/

Guba, E. G., & Lincoln, Y. S. (2005). Paradigmatic controversies, contradictions, and emerging confluences. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (3rd ed., pp. 191-215). Sage Publications Inc.

Han, S.-W., Borgonovi, F., & Guerriero, S. (2018). What motivates high school students to want to be teachers? The role of salary, working conditions, and societal evaluations about occupations in a comparative perspective. *American Educational Research Journal, 55*(1), 3e39. https://doi.org/10.3102/ 0002831217729875.

Harms, B. M., & Knobloch, N. A. (2005). Preservice teachers' motivation and leadership behaviors related to career choice. *Career and Technical Education Research, 30*(2), 101-124. https://doi.org/10.5328/CTER30.2.101

Harrison, J., MacGibbon, L., & Morton, M. (2001). Regimes of trustworthiness in qualitative research: The rigors of reciprocity. *Qualitative Inquiry*, *7*(3), 323-345. https://doi.org/10.1177/107780040100700305

Heinz, M. (2015). Why choose teaching? An international review of empirical studies exploring student teachers' career motivations and levels of commitment to teaching. *Educational Research and Evaluation*, *21*(3), 258-297. https://doi.org/10.1080/13803611.2015.1018278

Heinz, M. (2013). Why choose teaching in the Republic of Ireland? – Student teachers' motivations and perceptions of teaching as a career and their evaluations of Irish second-level education. *European Journal of Educational Studies, 5*(1), 1–17.

Hurtado, S., Han, J. C., Saenz, V. B., Espinosa, L. L., Cabrera, N. L., & Cerna, O. S. (2007). Predicting transition and adjustment to college: Minority biomedical and behavioral science students' first year of college. *Research in Higher Education, 48*(7), 841–887.

Ingram, M. L., Sorensen, T. J., Warnick, B. K., & Lawver, R. G. (2018). The influence of school-based agricultural education on preservice agriculture teachers' choice to teach. *Journal of Agricultural Education*, *59*(2), 64-78. https://doi.org/10.5032/jae.2018.02064

Konig, J., & Rothland, M. (2012). Motivations for choosing teaching as a career: Effects on general pedagogical knowledge during initial teacher education. *Asia-Pacific Journal of Teacher Education, 40*(3), 289-315. https://doi.org/10.1080/1359866X.2012.700045.

Kyriacou, C., & Coulthard, M. (2000). Undergraduate views of teaching as a career choice. *Journal of Education for Teaching, 26*(2), 117-126. https://doi.org/10.1080/02607470050127036

Lawver, R. G., & Torres, R. M. (2011). Determinants of pre-service students' choice to teach secondary agricultural education. *Journal of Agricultural Education*, *52*(1), 61-71. https://doi.org/10.5032/jae.2011.01061

Lawver, R. G. (2009). *Factors influencing agricultural education students' choice to teach*. (Doctoral Dissertation). University of Missouri-Columbia.

Lawver, R. G., & Torres, R. M. (2012). An analysis of post-secondary agricultural education students' choice to teach. *Journal of Agricultural Education*, *53*(2), 28-42. https://doi.org/10.5032/jae.2012.02028

Liu, C. H., Stevens, C., Wong, S. H. M., Yasui, M., & Chen, J. A. (2018). The prevalence and predictors of mental health diagnoses and suicide among U.S. college students: Implications for addressing disparities in service use. *Depression and Anxiety*, *36*(1), 8–10. https://doi.org/10.1002/da.22830

Lortie, D. (1975). *Schoolteacher: A sociological study*. University of Chicago Press.

Manuel, J., & Hughes, J. (2006). "It has always been my dream": Exploring pre-service teachers' motivations for choosing to teach. *Teacher Development, 10*(1), 5–24. https://doi.org/10.1080/ 13664530600587311

Marx, A. A., Smith, A. R., Smalley, S., &Miller C. (2017). Previous experience not required: Contextualizing the choice to teach school-based agricultural education. *Journal of Agricultural Education, 58(4)*, 126-142. https://doi.org/10.5032/jae.2017.04126

Maslow, A. H. (1943). A theory of human motivation. *Psychological Review, 50*(4), 370-396. https://doi.org/10.1037/h0054346

Maxwell, J. A. (2005). *Qualitative research design: An interactive approach* (2nd ed.). Sage Publications, Inc.

McKim, A. J., & Velez, J. J. (2017). Developing self-efficacy: exploring preservice coursework, student teaching, and professional development experiences. *Journal of Agricultural Education, 58*(1), 172-185. https://doi.org/10.5032/jae.2017.01172

McLean, L., Taylor, M., & Jimenez, M. (2019). Career choice motivations in teacher training as predictors of burnout and career optimism in the first year of teaching. *Teaching and Teacher Education*, *85*(1), 204-214. https://doi.org/10.1016/j.tate.2019.06.020

National FFA Organization (2020). *Our membership: Who we are.* https://www.ffa.org/our-membership/

Reid, I., & Caudwell, J. (1997). Why did secondary PGCE students choose teaching as a career? *Research in Education, 58*(1), 46–58. https://journals.sagepub.com/doi/pdf/10.1177/003452379705800105

Richardson, P. W., & Watt, H. M. G. (2006). Who chooses teaching and why? Profiling characteristics and motivations across three Australian universities. *Asia Pacific Journal of Teacher Education, 34*(1)*,* 27–56. https://doi.org/10.1080/13598660500480290

Rocca, S. J., & Washburn, S. G. (2008). Preservice agriculture teachers' perceptions of career barriers and support. *Journal of Agricultural Education, 49*(2), 38-49. https://doi.org/10.5032/jae.2008.02038

Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology, 25*(1), 54-67. https://doi.org/10.1006/ceps.1999.1020.

Santos, S. J., & Reigadas, E. T. (2002). Latinos in higher education: An evaluation of a university faculty mentoring programs. *Journal of Hispanic Higher Education, 1*(1), 40–50. https://doi.org/10.1177/1538192702001001004

Seymour, E., & Hewitt, N. M. (1997). *Talking about leaving: Why undergraduates leave the sciences.* Westview Press.

Slovacek, S., Whittinghill, J., Tucker, S., Peterfreund, A., Rath, K., Keuhn, G., & Reinke, Y. (2011). Minority students severely underrepresented in science, technology, engineering and math. *Journal of STEM Education: Innovations and Research 12*(1), 25–36.

Smith, A. R., Lawver, R. G., & Foster, D. D. (2018). *National agricultural education supply and demand study, 2017 executive summary*. http://aaaeonline.org/resources/Documents/NSD2017Summary_Final.pdf

Sorensen, T. J., Lawver, R. G., Hopkins, N, Jensen, B., Dutton, C., Warnick, B. K. (2018). Preservice agriculture teachers' development during the early phase of student teaching. *Journal of Agricultural Education, 59*(4), 105-119. https://doi.org/10.5032/jae.2018.04105.

Sorensen, T. J., McKim, A. J., Velez, J. J. (2017). A national study of work characteristics and work-family conflict among secondary agricultural educators. *Journal of Agricultural Education, 58*(2), 214-231. https://doi.org/10.5032/jae.2017.02214

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

Stake, R. E. (1995). *The art of the case study*. Sage Publications, Inc.

Stripling, C. T. & Ricketts, J. C. (2016). Research priority 3: Sufficient scientific and professional workforce that addresses the challenges of the 21st century. In T. G. Roberts, A. Harder, & M. T. Brashears (Eds.), *American Association for Agricultural Education national research agenda: 2016-2020* (pp. 29-35). Gainesville, FL: Department of Agricultural Education and Communication.

Swail, W. S., Redd, K. E., & Perna, L. W. (2003). *Retaining minority students in higher education: A framework for success*. Jossey-Bass.

Tinto, V. (1975). Dropouts from higher education: A theoretical synthesis of recent literature. *Review of Educational Research, 45*(1), 89-125. https://doi.org/10.3102/00346543045001089

Torres, R. M., Ulmer, J. D., & Aschenbrener, M. S. (2008). Workload distribution among agriculture teachers. *Journal of Agricultural Education*, *49*(2), 75. https://doi.org/10.5032/jae.2008.02075

Vincent, S. K., Henry, A. L., & Anderson, J. C., (2012). College major choice for students of color: Toward a model of recruitment for the agricultural education profession. *Journal of Agricultural Education, 53*(4), 187-200. https://doi.org/10.5032/jae.2012.04187

Watt, H. M. G., & Richardson, P. W. (2007). Motivational factors influencing teaching as a career choice: Development and validation of the FIT-Choice scale. *The Journal of Experimental Education, 75*(1), 167–202. https://doi.org/10.3200/JEXE.75.3.167-202

Watt, H. M. G., & Richardson, P. W. (2008). Motivations, perceptions, and aspirations concerning teaching as a career for different types of beginning teachers. *Learning and Instruction, 18*(1), 408–428. https://doi.org/10.1016/j.learninstruc.2008.06.002

Wigfield, A., & Eccles, J. S. (2000). Expectancy-value theory of achievement motivation. *Contemporary Educational Psychology, 25*(1), 68-81. https://doi.org/10.1006/ceps.1999.1015.

Younger, M., Brindley, S., Pedder, D., & Hagger, H. (2004). Starting points: Student teachers' reasons for becoming teachers and their preconceptions of what this will mean. *European Journal of Teacher Education, 27*(1), 245–264. https://doi.org/10.1080/0261976042000290787