

THE PERCEPTION OF AGRICULTURAL EDUCATION PROFESSIONALS
REGARDING THE PURPOSE AND CURRENT OUTCOME OF
SCHOOL-BASED AGRICULTURAL EDUCATION

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by
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The undersigned, appointed by the dean of the Graduate School, have examined the dissertation entitled

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REGARDING THE PURPOSE AND CURRENT OUTCOME OF SCHOOL-BASED
AGRICULTURAL EDUCATION CURRICULUM

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I dedicate this work to my mother, Kay Frazier,
who has been, and will always be, my best friend,
my greatest fan, my foundation and my hero!

This strong woman sacrificed everything
for her children and because of that sacrifice,
I have been given a better life.

I also dedicate this work to my PoPo and Grandma Sparks.

My grandma, Hilda Sparks has always
given me strength, guidance and faith when it
was needed most. My PoPo, the late Rex Sparks,
taught me the value of hard work, patience, respect,
and most of all, a strong love and belief in the
Father, the Son and the Holy Spirit.

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Ah, great it is to believe the dream
As we stand in youth by the starry stream;
But a greater thing is to fight life through,
And say at the end, "The dream is true!"
- - - *Edwin Markham*

As a youth in rural New Mexico, I would often wonder where the great journey of life would take me. There was no way to imagine the multitudes of people who would enter into my life and leave footprints on my soul. These are the same people that have allowed me to stand at the end of my educational journey and say, "The dream is true!" The dream of being a teacher, which is a passion unlike any other I have ever experienced; the dream to work with students, young and old, who want to better themselves so they can better others; the dream of motivating and inspiring others; the dream to see young people discover their own skills and gradually realize that they are truly "somebody special." With these dreams in mind, I want to thank several people.

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ABSTRACT

The purpose of this study was to identify if a discrepancy exists between agricultural education professionals' perceptions regarding the purpose and current outcome of school-based agricultural education (SBAE) curriculum.

The target population for this national study was agricultural education professionals ($N=13,049$). The stratified sample used in this study included homogeneous subgroups of SBAE teachers ($n=12,701$), teacher educators who concentrate on SBAE teacher development ($n=218$), and state agricultural education program leaders who are engaged with continuing professional development efforts of SBAE teachers ($n=130$). The resulting sample ($n=533$) consisted of 310 SBAE teachers, 127 teacher educators and 96 state agricultural education program leaders. The resulting sample consisted of individuals from every state in the nation.

These professionals identified teaching leadership skills as the top purpose and were unsure as to whether teaching traditional production agriculture should be a purpose.

The Borich Needs assessment identified needs of agricultural education professionals regarding the purpose of SBAE curriculum. The study found that

agricultural education professionals indicated a need for improvement in 16 of the 17 competencies utilized in this study, of which, increasing the awareness of global agricultural issues and developing higher-order thinking skills were found to be the most important.

Furthermore, this study employed factor analysis to create five, concentrated groups of teaching leadership skills, “agricultural awareness,” “post-secondary preparation,” “vocational skills,” and “agricultural as applied science” that were used in a multiple analysis of covariance (MANCOVA) to explain the significant differences that occur in agricultural educational professionals’ perceptions regarding the purpose of SBAE curriculum among different roles within agricultural education and regional locale. “Teaching leadership skills” was found to have the highest discrepancy among the five factors.

The study also concludes that regional locale and role within agricultural education are significant indicators regarding the purpose of SBAE curriculum. The findings of this study also indicate that there are significant differences regarding agricultural education professionals’ perceptions regarding the purpose and current outcome of SBAE curriculum.

CHAPTER 1

INTRODUCTION

Background and Setting

The intended outcome of school-based agricultural education (SBAE) curriculum has evolved since it was first integrated into secondary education. SBAE has transformed from a science-based, academic curriculum to a vocational education program overseen by the United States Department of Education (Hillison, 1996). Current trends facing the discipline of agricultural education that impact SBAE curriculum involve the integration of science both as content and process (Roberts & Ball, 2009), as well as the inclusion of biotechnology, horticulture, food science, products and processing, entrepreneurship, leadership, forestry and natural resources (Balschweid, 2002; Boone, Gartin, Boone & Hughes, 2006; Connors & Elliott, 1995; Dormody, 1993; Johnson, 1996; National Council on Vocational Education, 1990; Ricketts, Duncan, & Peake, 2006).

Since the integration of agricultural education into the American educational system via the Civilization Fund Act of 1819 (Hamilton, 2000), various forms of SBAE curriculum have been implemented. In 1889, Chambers' Encyclopedia defined agricultural education as "a comprehensive term, including instruction in chemistry, geology, botany, zoology, and mechanics-embracing, in short the science as well as the practice of agriculture" (p. 61). By contrast, the Smith-Hughes Act of 1917 stated that agricultural education "...shall be fit for useful employment; that such education shall be of less than college grade and be designed to meet the needs of persons over fourteen years of age who have entered or who are preparing to enter upon the work of the farm or of the farm home" (Smith Hughes Act, 1917). Thus, the purpose of SBAE shifted in less

than 30 years. This purpose has continued to evolve based on federal legislative and societal demands. According to the National Council for Agricultural Educations Strategic Plan (1999), the current purpose of SBAE curriculum is to prepare students for “successful careers and a lifetime of informed choices in the global agriculture, food, fiber and natural resources systems” (p. 5). The National Council for Agricultural Education (2008) stated that SBAE is “...a systematic program of instruction available to students desiring to learn about the science, business, and technology of plant and animal production and/or about the environmental and natural resources systems” (p. 2). For SBAE curriculum to evolve and prosper, it is imperative that a consensus be established among agricultural education professionals regarding the purpose of SBAE curriculum.

In order for agricultural education professionals to reach a consensus on the purpose of SBAE curriculum, they must first consider the impact of legislation on the evolution of curriculum. The purpose of SBAE curriculum is defined as what should be taught by SBAE curriculum. The Smith-Hughes Act of 1917 established vocational education as a separate and distinct form of education that integrated instruction, supervised projects and oversaw student organizations (Hayward & Benson, 1993). Many public schools offering SBAE quickly adopted the purpose of SBAE curriculum to be vocational, thus emphasizing the teaching of vocational skills through the context of agriculture. Vocational training provided students with the opportunity to learn skills in the classroom/laboratory and the opportunity to use these skills in vocational jobs outside the school setting. Agricultural education teachers adopted the Venn diagram for agricultural education as a way to illustrate this interaction. The Venn diagram places equal emphasis on classroom/laboratory instruction, supervised agricultural experience

(SAE), and the FFA organization (Dailey, Conroy, & Shelley-Tolbert, 2001; Dyer and Williams, 1997; The National FFA Organization, 2003; National Research Council, 1988; Talbert, Vaughn & Croom, 2005). Figure 1 illustrates the Venn diagram that is widely used to represent SBAE. The three components associated with SBAE have different dates of origin; however, all three facets of the Venn diagram were adopted by the profession in 1975 (Croom, 2007; Daily, Conroy & Selley-Tolbert, 2001). This study will focus on the instructional component of the model because it is the backbone of SBAE (Hillison, 1998). SAE and FFA are the practice and experience opportunities that students use to apply what they have learned in SBAE instruction; however, they are considered extra-curricular and not utilized by all students (Cheek, Arrington, Carter & Randell, 1994). The instruction piece of the Venn diagram is the most clearly defined piece of the diagram and it is utilized by all students.

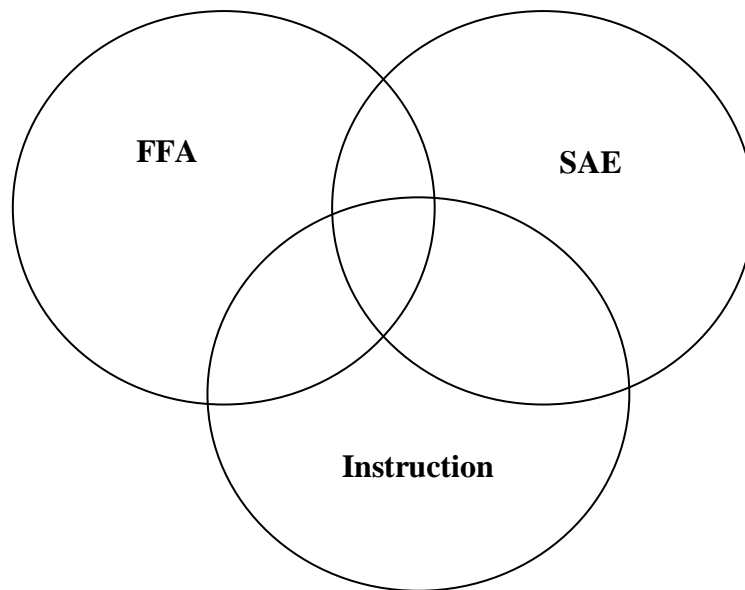


Figure 1: Venn diagram for agricultural education

Evolution of School-Based Agricultural Education (SBAE)

As a result of the Smith Hughes Act of 1917, SBAE curriculum shifted focus to the acquisition of technical skills and knowledge that would ensure student competence and preparation for a career in the industry of agriculture (Barrick, 2007). In the 1980s, however, educational reports such as *A Nation at Risk* (National Commission on Excellence in Education, 1983) and *Understanding Agriculture: New Directions for Education* (The National Research Council, 1988) sparked changes in curriculum that were intended to shift the purpose of SBAE curriculum to include more applied sciences and classes such as food science and safety, environmental science, aquaculture and biotechnology (Case & Cloud 2007; Conroy, 2000).

To meet societal changes, SBAE was begun to modernize and enhance curriculum. To accomplish this goal, multiple initiatives such as the National Council for Agricultural Education's *10 X 15 Long Range Goal for Agricultural Education* initiative, *Lifeknowledge®*, and the National Council for Agricultural Education's *National Quality Program Standards for Secondary (Grades 9-12) Agricultural Education* were introduced (Camp, 2007; Martin, 2007). These initiatives emphasized significant reform in curriculum as a way of meeting academic standards set forth by the federal and state legislators (Chiason & Burnett, 2001; Parr, Edwards & Leising, 2006). These reforms emphasized the integration of academics into SBAE curriculum; however, they vaguely addressed the facet of vocational curriculum which historically served as the foundation of SBAE since the passage of the Smith-Hughes Act of 1917 (Dormody & Seevers, 1994; Thompson & Balschweid, 1999).

Calls for integrating academics into SBAE curriculum have been supported by multiple studies (American Association for the Advancements of Sciences, 1993; National Academy of Sciences, 1988; Osborne & Dyer, 1988; Roberson, Flowers & Moore, 1997; Roegge & Russell, 1990; Thompson & Balschweid, 1999). Furthermore, research has supported teaching science through the context of agriculture as a vehicle for learning scientific principles (Enderlin & Osborne, 1992; Enderlin, Petrea & Osborne, 1993; Roberts & Ball, 2009; Roegge & Russell, 1990; Whent & Leising, 1988). Further research has connected SBAE curriculum to significant achievement on math performance (Parr, Edwards and Leising 2006).

In addition to teaching vocational skills and academics, SBAE has also claimed the teaching of leadership development as a part of the curricular focus (Arrington, 1985; Dormody & Seevers, 1994; Morgan & Rudd, 2006; Mullins & Weeks, 2006; Ricketts & Newcomb, 1984). After the *Labor Secretary's Commission on Achieving Necessary Skills* report (SCANS, 1991), SBAE added skills pertaining to interpersonal communication, organization, thinking, personal qualities and resource allocation into existing curriculum (Brock, 1992). Recently, the Council for Agricultural Education introduced the *Lifeknowledge*® curriculum as an effort to teach leadership skills to every student in SBAE (National FFA Organization, 2003).

Statement of the Problem

With numerous shifts in SBAE curriculum focus, there are many questions that arise. Legislative initiatives, societal changes and industry needs have created a shift in SBAE curriculum (Herbst, 2001); yet, there is little consensus in the literature

(Jenkins, 2007; Roberts & Ball, 2009) and little anecdotal evidence in the profession to provide clarity regarding the purpose of SBAE curriculum.

Four basic entities have had a direct, recent impact on the intended purpose of SBAE curriculum. The *Strategic Plan for Agricultural Education* set forth goals regarding content of SBAE curriculum (Team AgEd, 2000). The National FFA Organization strategies outline specific SBAE goals that should be attained by every member (National FFA, 2009). The *National Quality Program Standards for Secondary (Grades 9-12) Agricultural Education* introduced guidelines that should be attained regarding content and instruction within SBAE (Team AgEd, 2007). Finally, the Office of Vocational and Adult Education of the United States Department of Education (USDE, 2006) developed expectations for curriculum in vocational programs, such as SBAE. All four of these entities identified goals and purposes for SBAE curriculum that would enable it to meet the current demands; however, significant variations exist in these views. If curriculum is going to be constant among SBAE programs, it is imperative that a consistent set of goals be established regarding the purpose of SBAE curriculum (Klein, 1991). Once established, these goals will provide a highly effective, well-defined path for performance, quality, clarity, and expectations (Locke & Latham, 1990).

Significance of the Study

The viability of SBAE curriculum to survive in modern society is contingent upon adapting to current problems and trends in agriculture; thus, curricular changes are inevitable (Camp, 1999; Hillison, 1998). For these curricular changes to be successful,

the underlying principles of SBAE curriculum must be clearly defined (Klein, 1991; Martin, Rajaeskaran, & Vold, 1989; Norris & Briers, 1988).

The basic focus of SBAE curriculum has expanded to include more academic focus (Dailey, Conroy, & Shelley-Tolbert, 2001) and leadership development (Fritz & Brown, 1998; Kelsey & Wall, 2003; Morgan & Rudd, 2006). Educational reforms, such as No Child Left Behind (USDE, 2004), stress accountability through achievement scores in core curriculum academic areas and they are causing all programs to justify their existence at the secondary level (Case & Cloud, 2007). Claims have been made that NCLB would challenge the ability of career and technology education programs, including SBAE, to integrate academics into their instruction; thus, giving students a more well rounded secondary education (Association of Career & Technical Education, 2004). To accomplish this, it has been asserted that SBAE needs to implement core academics into their curriculum as a way to meet educational requirements set forth by NCLB (Martin, Fritzsche & Ball, 2006). It has further been claimed that greater integration of vocational and academic education would raise the academic achievement bar (D'Amico, 2002).

In order to adapt to current educational reforms, SBAE must identify its current position in education and develop curriculum that will address changes and improvements in food production, nutrition, environmental stewardship, human health, technology, and the global economy (The National Council for Agricultural Education, 2003). By identifying the purpose of SBAE curriculum, modifications can be sanctioned that will allow the development of curriculum that is capable of meeting modern demands.

In an effort to identify the ability of SBAE curriculum to meet the purposes it has been charged with, the current outcome was addressed. Current outcome shows if SBAE curriculum is doing what it says it is doing. By identifying the current outcome of SBAE curriculum, agricultural education professionals can see the ability of SBAE programs to meet the purpose that has been set forth. Realizing that multiple factors influence current outcomes, agricultural education professionals can identify which of these factors are the most influential.

Conceptual Framework

The conceptual framework for this study was adapted from Rojewski's (2002) work in career and technical education (see Figure 2). This framework capitalizes on a coherent perspective of the field and is based on legislation, description of the work place and work force, research, opinion and everyday practice. Five components of an educational program—curriculum, instruction and delivery options, student assessment, student populations, and program evaluation—are represented by this conceptual framework. Curriculum reflects the state of the field: what is considered important and what is being taught. The purpose of SBAE curriculum is the driving force behind this study. By defining a strong set of academic goals for SBAE curriculum, stakeholders will be able to provide an emphasis for integration of academics, articulate SBAE curriculum purpose, and connect SBAE curriculum to the workforce.

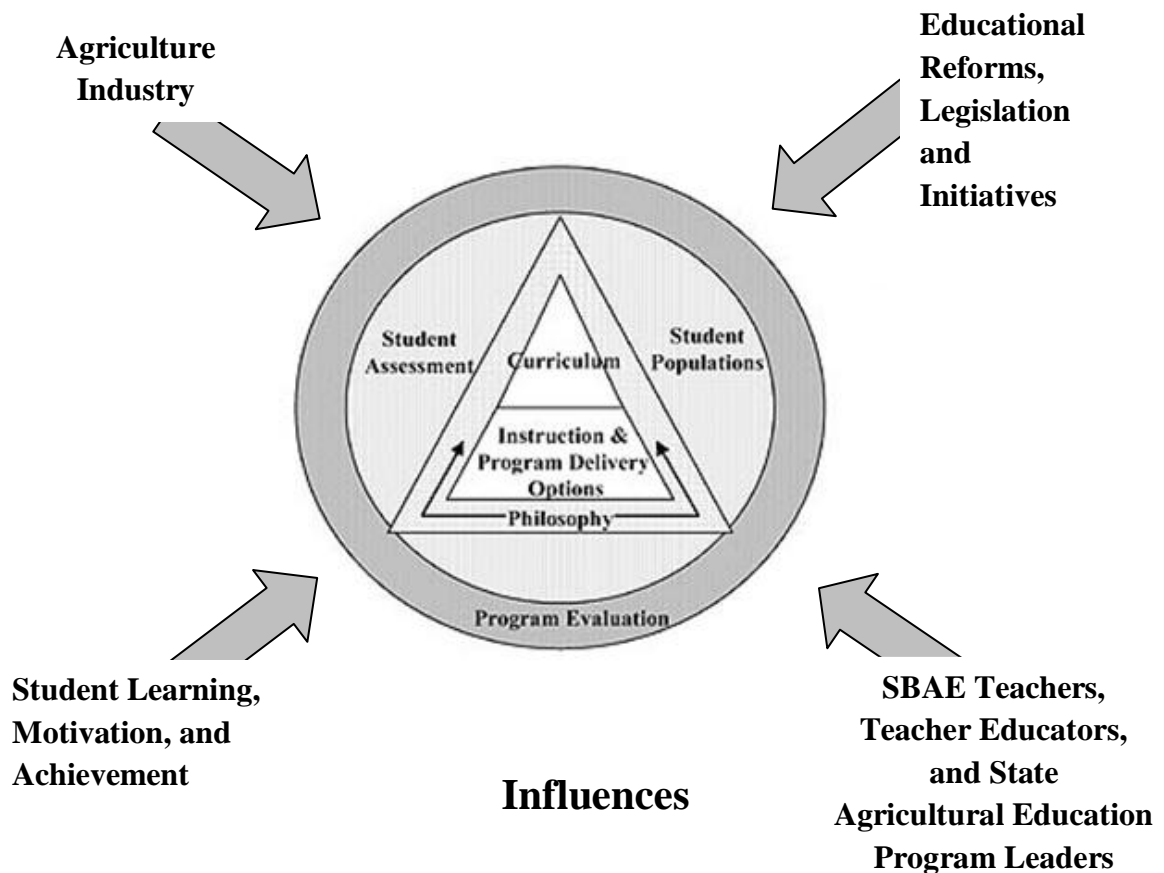


Figure 2. Conceptual framework for agricultural education as adopted from Rojewski's (2002) model for career and technical education.

This conceptual framework accounts for the internal and external forces, such as the new and emergent economy, education reform initiatives, student learning and the expectations of society for career and technical education, on SBAE curriculum (Rojewski, 2002). These forces play a significant role in the development of SBAE curriculum; thus, they serve as parameters for this study to follow. Educational reforms, legislative regulations and SBAE initiatives have provided a platform for change within SBAE curriculum, as well as a need for redefining the goals of SBAE curriculum. SBAE teachers, teacher educators, and state agricultural education program leaders have the

ability to shape the purpose of SBAE programs by demanding that curriculum taught in SBAE be rigorous and relevant to the current agricultural industry. Research has indicated that SBAE curriculum directly influences student learning, motivation, and achievement within SBAE (Bransford, Brown & Cocking, 2000; Cano, 1993; Cano & Martinez, 1991; Dyer & Osborne, 1996; Garton, Spain, Lamberson & Spiers, 1999; McCormick & Whittington, 2000; Roberts & Dyers, 2005).

This study did not evaluate the student component of the conceptual framework; however, it recognized that SBAE curriculum directly influences students; therefore, it stands to reason that a more clearly defined purpose for SBAE curriculum would indirectly lead to positive outcomes for students.

By studying the perceptions of agricultural education professionals, this study will identify what purposes of SBAE curriculum are considered significant. The study will then identify the current outcome of these purposes in an effort to identify influences that affect both purpose and current outcome of SBAE curriculum. The definition of current outcome of SBAE curriculum is what is currently being taught through SBAE curriculum. With this in mind, what does SBAE curriculum say it's supposed to do and what does it actually do?

Purpose of the Study

The purpose of this study was to identify if a discrepancy exists between various agricultural education professionals' perceptions regarding the purpose and current outcome of school-based agricultural education (SBAE) curriculum.

Research Objectives

The following research objectives were used to guide this study:

1. Describe agricultural education professionals by role in agricultural education, sex, age, years of experience in agricultural education, regional locality and highest educational degree attained.
2. Describe the perceptions of agricultural education professionals regarding the purpose of SBAE curriculum.
3. Describe the perceptions of agricultural education professionals regarding the current outcome of SBAE curriculum.
4. Describe discrepancies between perceptions of agricultural education professionals regarding the purpose and current outcome of SBAE curriculum.
5. Describe differences that occur in perceptions of agricultural education professionals regarding purpose of SBAE curriculum among different roles within agricultural education and regional locale.

Definition of Terms

Agricultural Education – “The scientific study of the principles and methods of teaching and learning as they pertain to agriculture” (Barrick, 1988, p. 5).

Agricultural Education Professionals – Includes SBAE teachers, teacher educators who concentrate on SBAE teacher development and state agricultural education program leaders who are engaged with continuing professional development efforts of SBAE teachers.

Current Outcome – What agricultural education professionals feel is currently being taught in SBAE curriculum.

Curriculum- The subject taught at an educational institution, or the topics taught within a subject (Webster’s Ninth New College Dictionary, 1985).

Instruction – Teaching in a particular subject or skill; the facts or skills taught (Borich, 1999)

National Council for Agricultural Education - The National Council for Agricultural Education (The Council) is the premier leadership organization responsible for shaping and strengthening SBAE at all levels in the United States (The Council, 2008).

National Association of Agricultural Educators (NAAE) – NAAE serves as a national voice and unifying force for agriculture teachers across the United States. NAAE provides developmental opportunities, legislative advocacy, leadership development education, technical in-service, and other opportunities for agricultural educators (NAAE, 2008).

National FFA Organization (FFA) – “FFA is a national youth organization of 461,043 student members preparing for leadership and careers in the science, business and technology of agriculture with 7,308 local chapters in all 50 states, Puerto Rico and the Virgin Islands” (National FFA, 2009, p. 2).

Purpose of SBAE curriculum – The view of agricultural education professionals regarding what should be taught in SBAE curriculum.

School-based agricultural education (SBAE) – Synonymous with agricultural education; used to describe secondary agricultural education programs.

SBAE teachers – Agricultural education teachers who teach at the secondary level (grades 9-12).

State agricultural education program leaders – Includes directors of agricultural education/FFA, state FFA executive secretaries and any other directors that work and oversee the agricultural education program within their representative state.

Supervised Agricultural Experience (SAE) - A practical application of classroom concepts designed to provide “real world” experiences and develop skills in agriculturally related career areas (National FFA, 2008, p. 3).

Teacher educators – University professors that are directly involved in the training and certification of SBAE teachers.

Vocational education, Vocational Education and Training (VET), Career and Technical Education (CTE), and Technical Education - Synonymous terms that describe an educational system that prepares learners for jobs that are based in manual or practical activities, traditionally non-academic and totally related to a specific trade, occupation or vocation (Vocational Education, 2008).

Assumptions

For this study, the following were assumed to be true:

1. The questionnaire was structured in a manner that ensured unbiased answers from the respondents.
2. The purpose of SBAE curriculum changes periodically in order to meet educational, industry, legislative, and societal demands.
3. The respondents were honest and objective with their responses.

4. SBAE curriculum has a purpose.
5. SBAE curriculum is designed with an outcome in mind.

Limitations of the Study

The following were identified as limitations of the study:

1. Names and email addresses for participants were complete and accurate. All frames were scrutinized for errors and duplicates; however, the researcher had no formal means for verifying accuracy.
2. Data was collected during the 2008-2009 school year. Participants may have responded differently to items on the instrument based on their previous experience with SBAE curriculum.

CHAPTER 2

LITERATURE REVIEW

Purpose of the Study

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5. Describe differences that occur in perceptions of agricultural education professionals regarding purpose of SBAE curriculum among different roles within agricultural education and regional locale.

Introduction

School-based agricultural education (SBAE) curriculum has evolved since the inclusion of agricultural education into secondary schools (Boone, Gartin, Boone & Hughes, 2006; Day, Raven, & Newman, 1988; Hillison, 1996; Hillison, 1998; Marrison & Frick, 1994; Wheeler, 1948). Figure 3 shows external factors that influence SBAE curriculum.

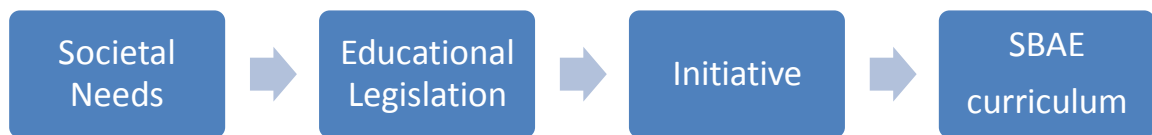


Figure 3. External factors that influence SBAE curriculum.

Societal needs have caused legislative priorities within education, which in turn, have influenced initiatives that have shaped SBAE curriculum. This study sought to determine the perceptions of agricultural education professionals regarding the purpose and current outcome of SBAE curriculum and the influence of agricultural education professions' role in SBAE and regional locale on the purpose of SBAE curriculum. This chapter will outline the conceptual framework that guided this study as well as present a review of literature that illustrates the external factors influencing SBAE curriculum.

Conceptual Framework

The conceptual framework that served as the basis for this study was a modified version of Rojewski's (2002) conceptual framework for career and technical education. The model was based on projections for the future economy, work/family/community demands, and career and technical education. The model also reflects the extant literature and current state of education reform. The framework takes into consideration the influence of outside sources, program evaluations, student assessment and population and philosophy on curriculum and the delivery methods used to teach this curriculum. SBAE curriculum falls under the jurisdiction of career and technical education (Smith-Hughes, 1917); thus, it falls within the realm of this framework. For the purpose of this study, slight modifications were made to better illustrate SBAE curriculum (see Figure 4). This particular framework was chosen because it best illustrates the effects of external factors on SBAE curriculum.

As indicated by the model, curriculum and the instruction and delivery of said curriculum lie at the center of SBAE and are influenced by multiple entities. Curriculum represents what and how content is being taught (Lewis, 1999). Based on the most recent Carl D. Perkins legislation, there is a strong need for integration of both academic and career and technical education (Carl D. Perkins, 2006). The need also exists to form stronger connections between school and work. The model also shows the importance of student assessment and student populations. Because of the nature of this study, the variables of student assessment and student populations will not be studied; however, it should be noted that they do play a significant role in the overall model.

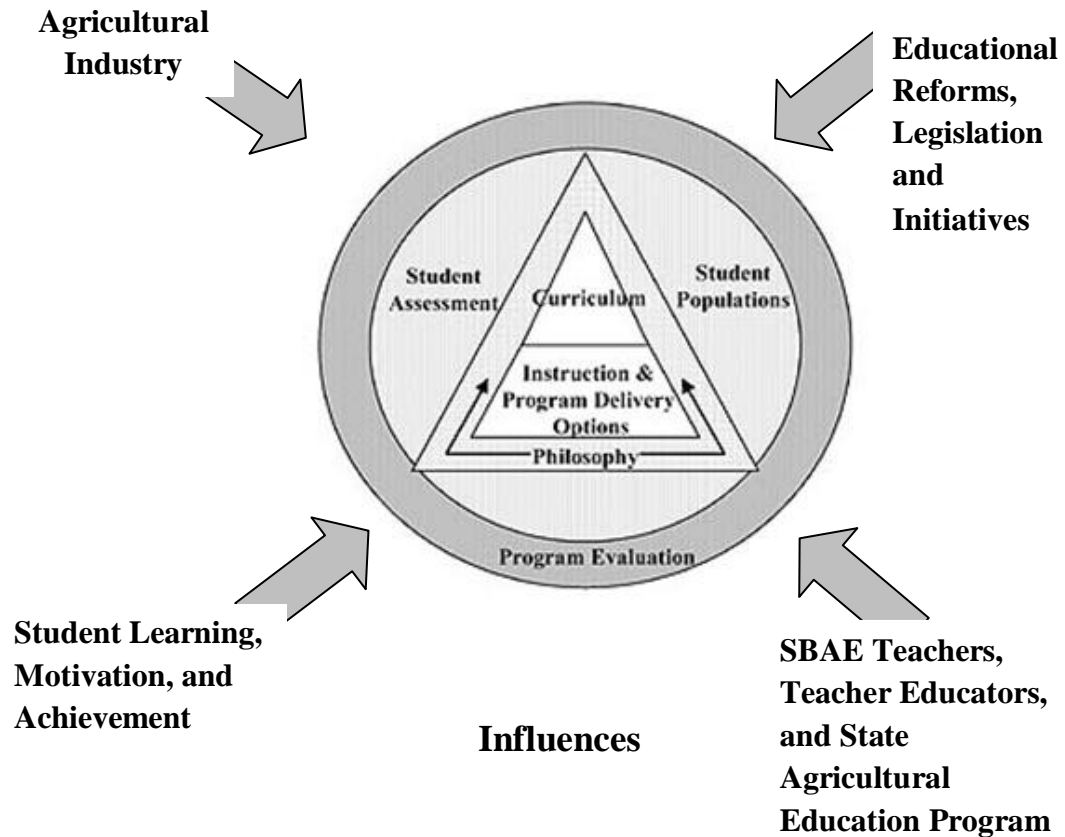


Figure 4. Conceptual framework for agricultural education as adapted from Rojewski's (2006) model for career and technical education.

Rojewski (2002) emphasized the impact of outside influences on curriculum, instruction and program delivery. Reform initiatives, legislation and changes in the workforce and their influence on educational curriculum must be recognized by policy makers due to the affect they have on curriculum development (Kincheloe, 1999). By taking into account the new and emergent economy, education reform initiatives, student learning, and the expectations of society for career and technical education, the model illustrates the significant role that external and internal forces have on the development of SBAE curriculum. Educational reforms, legislation, and initiatives have all been instrumental in guiding change within SBAE curriculum. SBAE teachers, teacher

educators, and state agricultural education program leaders have also aided in shaping the purpose of SBAE curriculum. These agricultural education professionals have been the primary force behind curriculum and teacher development within SBAE. Instructional policy makers need to visualize and implement major changes to the education infrastructure in order for it to reflect a higher quality workforce for the 21st century (Biggs, Hinton, and Duncan, 1996).

SBAE teachers have the opportunity to change SBAE curriculum based on philosophies that have influenced SBAE throughout history (Swanson, 1980). Philosophy is seen as giving meaning to the decisions and actions made by curriculum makers (Yusof, 2008). In the process of making decisions in education, curriculum makers have to look at different philosophies before focusing on those which serve the needs of the current students and programs.

The reality that philosophy is crucial to curriculum is illustrated by the outer triangle in the conceptual model used in this study. History, societal needs and industry demands have fostered and changed the basic philosophy of curriculum over the years; thus, their role in the future of curriculum development is significant (Rojewski, 2002). Agricultural education professionals must remember that education emerged from a coalescing of different ideas and thoughts and will continue to change based on the adaptation of new and ever-changing philosophies (Moore, 1987). These ever-changing philosophies have also altered the outcome desired from SBAE curriculum. Work skills required in the 21st century have evolved from predominately manual labor skills to work skills that include higher-order thinking, flexibility, interpersonal communication and technological literacy (Rojewski, 2002). Each of these new skills is significant to the

current purpose of SBAE curriculum. Charles Prosser and David Snedden were the first to advocate vocational education as a way of preparing students to serve society and meet the labor needs of business and industry (Moore, 1987); however, as society and industry demands have changed, so too has the demand from students that enroll in agricultural education (Conroy & Kelsey, 2000). Current SBAE students need programs that include vocational and academic applications that will prepare them for careers within the current agriculture industry (Eaton, & Bruening, 1996).

Program evaluation is another focal point in SBAE; thus, it is represented in the conceptual framework. To be effective, SBAE curriculum requires careful evaluation in order to assess whether or not the goals and objectives of the programs are achieved (National FFA Organization, 2001). In 2006, the National Agricultural Education Council introduced *National Quality Program Standards For Secondary (Grades 9-12) Agricultural Education* as a way for local teachers, administration, community partners, stakeholders, advisory committees, FFA alumni and external assessment teams to evaluate the local SBAE program and develop clear goals and objectives for program improvement (National Agricultural Education Council, 2006). According to the National Agricultural Education Council (2006), evaluating SBAE programs is a method to “provide a consistent delivery of high quality agricultural education programs across the nation focused on relevant instruction, rigorous clear goals, continuous program improvement and the development of essential skills for student success” (p. i). While program evaluation clearly influences content and instruction within SBAE curriculum, this study concentrated on the external influencers such of role within agricultural education profession, and regional locality and their affect on the purpose of SBAE

curriculum. By concentrating on these external factors, this study will be able to provide a better understanding as to the perceptions of agricultural education professionals regarding the purpose of SBAE curriculum.

The internal factors of program evaluation, student assessment, student populations, philosophy, instruction and program delivery, and curriculum that influence Career and Technical Education programs are just part of the overall conceptual framework for this study. The principal emphasis of the conceptual framework revolves around Rojewski's (2002) assertion that external factors directly shape SBAE curriculum. This connotation is what drives this study conceptually. Three slight modifications were made in Rojewski's conceptual framework in an effort to make the model applicable to SBAE curriculum specifically. According to the conceptual framework, there are four major, external factors that influence curriculum and instruction; the first of which is school reforms. The title "school reforms" was modified to "educational reforms, legislation and initiatives" to better reflect those entities that have shaped instruction within SBAE curriculum.

The most sweeping reform in modern history was the National Commission on Excellence in Education's report, *A Nation at Risk* (1983), which called for a massive restructuring of public education. Underlying this call for reform was the assumption that problems in the economy, labor market, and workplace "run a complex but direct path—from ineffective schools to increased social problems, loss of international competitive advantage, and high unemployment of youth" (Hartley, Mantle-Bromley, & Cobb, 1996, p. 24). One of the major downfalls of *A Nation at Risk* for SBAE was the reform's call for more academic requirements, thus limiting the number of extra-curricular classes that

students were allowed to choose at the secondary level. Since *A Nation at Risk*, there have been multiple initiatives, reforms and legislation that have impacted SBAE curriculum. High profile reports have continued to emphasize the efforts of educational reform. The National Academy of Science Committee on Agricultural Education in the Secondary Schools report, *Understanding Agriculture: New Directions for Education* (1988) called for fundamental changes in SBAE curriculum and in agricultural teacher education. The *Secretary Commission on Achieving Necessary Skills* (SCANS) report (1992) identified workplace competencies needed by all workers. Included in these competencies was the ability to manage resources, work productively with others, acquire and use information, understand complex systems, and work comfortably with a variety of technologies. *A Nation Still at Risk* (1999), reiterated the 1983 *A Nation at Risk* report and claimed that little had been done to fix the mediocrity of education and once again called for an increase in academics and thus a decrease in classes such as SBAE. A powerful legislative movement in modern times was the passage of No Child Left Behind (NCLB, 2001) which revolutionized current education. As a result of NCLB, the National Council for Agricultural Education introduced multiple initiatives to allow SBAE curriculum to address the mandates that evolved from NCLB. Among these initiatives were the *National 10 X 15 Long Range Goal Initiative*, *FFA Lifeknowledge®*, the *National Curriculum Framework*, and the *National Quality Program of Standards for Secondary (Grades 9-12) Agricultural Education* (Camp, 2000).

The second external factor in this study's conceptual framework is "Agricultural Industry." The current study is comprised of content areas that prepare students for careers in the industry of agriculture; thus, the title "New Economy" from Rojewski's

conceptual model was modified to “Agricultural Industry.” Work and family life has reported to be directly affected by changes occurring in the workplace (Reich, 2000). Within SBAE, the instructional component is impacted greatly by employers within the industry of agriculture (Hawke, 2000). Based on industry and employer demands, current SBAE curriculum should reflect skills such as decision making, problem solving, flexibility, creative thinking, conflict resolution, managing information and resources, and the capacity for reflection (Carnevale, 1991).

“Stakeholder Expectations” represent the third external factor that influences SBAE curriculum. In the original model, this factor was represented by the title “Public Expectations” which represented the multiple constituency groups that were significant to vocational education. To elucidate this title, “Stakeholder Expectations” was used by this study to better illustrate those individuals and entities that influence instruction within SBAE curriculum. This title was chosen because it better represents the various entities that are instrumental in the development of SBAE curriculum development; in essence, stake holders are a part of the program development rather than external forces that just voice their expectations. All stakeholders, including state agricultural educational leaders, SBAE teachers and teacher educators must “continually and systematically discuss issues of concern to the profession” (Conners, 1998, p. 46). As a stakeholder, parents of students enrolled in SBAE play a vital role in the development of curriculum. Parents of SBAE students have been reported to be concerned about rigor, vocational emphasis and the need for science in agricultural education (Osborne and Dyer, 2000). Research also shows that secondary principles continue to view agricultural education solely as vocational in nature (Kalme & Dyer, 2000; Price, 1990). It is important to acknowledge

school administrators' opinions of SBAE curriculum because their decisions drastically affect program operations and directions (Viterna, 1971).

The fourth external factor illustrated in the conceptual model is “Student Learning, Motivation, and Achievement.” Understanding students based on their past experiences, needs and capacities is the best way to provide motivation for achievement in the classroom (Dewey, 1938). It has been asserted that SBAE curriculum needs to design ways that contribute to the student academic achievement in the subject areas of science, mathematics, and reading (Myers, Washburn & Dyer, 2004). Gains in student achievement were shown when students were taught academic subjects in the context of agriculture (Balschweid, 2002; Balschweid & Thompson, 2002; Boone, Gartin, Boone, Hughes, 2006; Chiasson & Burnett, 2001; Conroy & Walker, 2000; Dyer & Osborne, 1999; Enderlin & Osborne, 1992; Enderlin, Petrea, & Osborne, 1993; Flowers & Osborne, 1988; Hamilton & Swortzel, 2007; Layfield, Minor, & Waldvogel, 2001; Myers, Washburn & Dyer, 2004; Ricketts, Duncan, & Peake, 2006; Roegge & Russell, 1990; Thompson & Schumacher, 1998; Whent & Leising, 1988). Previous studies found that leadership activities and personal development have been positively influenced by the curriculum that is being taught in SBAE (Atkins, 1999; Billings, 2003; Busse, 1992; Case and Whitaker, 1998; Candy & Crebert, 1991; Claxton & Murrell, 1987; Cross, 1976; Dormoody & Seevers, 1994; Evans, Rush & Berdrow, 1998; Gardner, 1987; Griggs, 1991; Hershey, Bland & Johnson, 2001; Hewitt, 2005; Lockaby, 1987; Lockaby & Vaughn, 1999; The National Association of Colleges and Employers, 2003; Riesenber, 1992; Robinson, 2006; van Linden & Fertman, 1988; Wingenback & Kahler,

1997). By providing a curriculum that is rigorous and relevant, SBAE will continue to have a positive influence on student leadership and personal development.

Societal needs for curriculum within agricultural education

SBAE programs should be informed by the lessons of history as they progress to meet the changes of society (Martin, Ball & Connors, 2006). These same history lessons provide a better understanding as to how societal needs have influenced SBAE curriculum. Societal pressures on SBAE programs have had a direct affect on program development over time (Straquadine, 1988). Research confirms a multitude of societal influences on SBAE curriculum including education regarding cultivation, emergence of religious traditions, the emancipation of slaves and the need to educate a once enslaved agricultural economy, an emphasis on vocational training in schools and teaching agricultural literacy (Anderson, 1988; Thompson & Russell, 1993; True, 1929).

The development of agricultural education and eventual vocational education in American schools began at the turn of the 20th century. In 1906, The National Society for the Promotion of Industrial Education was formed in an effort to motivate states to pass vocational training acts (Smith, 1999). The philosophy of this society was to encourage local school boards to establish vocational education programs which were to be controlled by the local level. In 1907, President Theodore Roosevelt stated, “We of the United States must develop a system under which every citizen shall be trained so as to be effective individually as an economic unit and fit to be organized with his fellows so that he and they can work in efficient fashion together” (Soretire, p. 18). This passage clearly illustrates that President Roosevelt realized the significance of vocational education to the local community. It was also a sign to early educational leaders that

vocational training was not only acceptable in American schools but was expected. The actions of these early education leaders had a profound impact on education and served as the foundation for current SBAE curriculum.

The Philadelphia Society for Promoting Agriculture (Batz, 1985) was one of the first organizations established in the United States that emphasized the importance of instruction of scientific and business principles through the context of agricultural education. According to this organization, these principles were to be taught to adults and young men within every community as a way of promoting education in agriculture. About this same time, a strong public sentiment for vocational education was developing as the expansion of the Industrial Revolution created a demand for skilled workers (Finch & Crunkilton, 1999).

The nature of the content, as well as the level at which the content should be taught, has been considered throughout the development of SAE curriculum. Liberty Hyde Bailey began his book *The Training of Farmers* (1909) by questioning how society should develop a rural civilization that was permanently satisfying and worthy of the best desires. Thus, agricultural education must start at the elementary level with the child's world and not with the teachers (Bailey, 1909). By doing so, agriculture becomes a means of education. It has been asserted that all students should receive at least some systematic instruction about agriculture "...beginning in kindergarten or first grade and continuing through twelfth grade" (Research Council, 1988, p. 10). If American youth were expected to understand agriculture, then agriculture must be "included in the day-to-day curriculum" (Williams and White, 1991, p. 10). In 1981, with the support of United States Secretary of Agriculture John Block, an agricultural literacy program, Agriculture

in the Classroom, was initiated (Hillison, 1998). This program was an effort to teach all children about agriculture and its importance to the American society. The idea of teaching agricultural concepts to all children and adults would later prove to be vital in SBAE curriculum (Balschweid, Thompson, & Cole, 1998; Flood, 1993; Frick, Kahler, & Miller, 1990; Knoblock & Martin, 2002; Igo & Leising, 1999; Lichte, & Birkenholz, 1993; Luthman, Ewing, & Whittington, 2007; Nordstrom, Wilson, Richards, Coe & Fivek, 1999; Traxler, S., 1990). Agricultural education has been a vital element throughout history and the ability to provide agricultural literacy to all people is an important factor to consider when developing SBAE curriculum and initiatives.

Legislation impacting instruction within agricultural education

SBAE curriculum has been impacted greatly by educational legislation resulting from societal demands; thus, the correlation between SBAE curriculum and society is a result of educational legislation. Legislation that established SBAE curriculum as a discipline in secondary schools did not occur until the early part of the 20th century; however, research has shown that SBAE started before Federal legislation provided funds and support (True, 1929). One of the larger issues to impact SBAE occurred in 1779 when Virginia Governor Thomas Jefferson proposed a two-track educational system with different tracks for the laboring and the learned (Cunningham, 1987). This legislation was the origin of the “academic versus vocational education” controversy which is still in existence today (Hillison, 1999).

The Morrill Act of 1962 was another piece of legislation that indirectly influenced SBAE. This act provided public lands to states for the purpose of establishing state

universities that would concentrate their education mission on the learning of agriculture and mechanics (Lightcamp, ND). As a result of the this act, secondary students were encouraged to continue their education in more applied studies, such as agriculture, that would prepare them for the world that they would enter once they left school.

By the late 1800's, it was evident that the educational system in the Unites Stated needed to become standardized (Hertzberg, 1988). One school's philosophy would emphasize memorization (Conroy, Trumbull & Johnson, 1999) while another concentrated on critical thinking (Darling-Hammond & Falk, 1997). Some schools believed that students should be divided into two groups: college bound and vocational trades, while others developed standardized courses for all students (Gordon, 1999). The division of vocational training, such as that received in SBAE, and academics would remain in American schools where they were considered separate entities with separate purposes.

During this same period in time, individual schools determined which philosophical base they would use as influenced by the demand of their local community; thus, the diversity of school philosophies were taxing on the educational system. With this in mind, the Committee of Ten was formed by the National Educational Association (Ornstein & Levine, 1993). This committee, under the guidance of Charles William Eliot, President of Harvard University, set forth recommendations that emphasized a college-oriented high school. Among the recommendations of the committee was that all students would be given an education regardless of their future educational plans or careers and each student would receive twelve years of education (Meyer, 1967). The recommendations were quickly adopted throughout the United States and were

interpreted as a call to teach mathematics, English, history or civics, and biology, chemistry and physics in ascending order during high school. SBAE programs would be challenged by the implementation of stricter academic requirements; however, the recommendation was considered by some to be the first emphasis of academic integration. The recommendation of the Committee of Ten, along with the demand for skilled workers created by the expansion of the Industrial Revolution, proved to be challenging for many vocational programs; thus, leading to the passage of some of the earliest vocational education legislation (Finch & Crunkilton, 1999).

In 1917, the Smith Hughes Act became the first federal legislation to allocate money specifically for vocational programs below the baccalaureate level. This act specifically promoted training in agriculture, trades and industries, commerce, and home economics in secondary schools. The Smith-Hughes Act was intended to promote vocational education in the public school by targeting students that were over the age of 14 and who desired training in a chosen vocational field. Not only did the act provide vocational training, it set forth certain standards that schools had to meet in order to qualify for federal funding. In an effort to oversee these standards, the Smith-Hughes act established federal and state Boards of Vocational Education (Scott & Sarkees-Wircenski, 1996). This act, in essence, de-emphasized academic and scientific instruction within SBAE curriculum and shifted the purpose of agricultural education to vocational in nature (Prentice, 2008). Because vocational programs were to be overseen by a separate board and because the Smith-Hughes Act stipulated that students who received vocational training receive no more than 50 percent academic instruction, the stage was set for the separation of vocational education from academic education (Smith, 1999).

Although this requirement was intended to protect the interest of vocational education, it served more as more of a separation of vocational education from academic education (Patterson, 2008). To deal with this separation, State Boards of Vocational Education quickly developed the 50-25-25 system which mandated that vocation students spend 50 percent of their time in shop work, 25 percent of their time in courses closely related to their chosen field of study and 25 percent of their time in academic classes (Patterson, 2008).

The Smith-Hughes Act also provided for the establishment of the Federal Board for Vocational Education which was to oversee all vocational education programs. The movement of the national leadership of instruction within SBAE from the United States Department of Agriculture to the Federal Board for Vocational Education eventually led to the transfer of national leadership into the hands of the United States Department of Education (Hillison, 1996). Although SBAE had been considered an academic program, the passage of the Smith-Hughes Act placed agricultural education firmly in the context of vocational education (Smith & Gassie, 1981). From that point forward, all vocational education acts directly impacted SBAE curriculum.

After the passage of the Smith-Hughes Act, congress and local communities began placing a large emphasis on the improvement of vocational education and showed their support by passing several bills including the George Reed Act of 1929, George Elzey Act of 1934, George-Deen Act of 1936, George-Barden Act of 1946 and The National Defense Education Act of 1958 that increased federal funding for instruction in SBAE and other vocational programs (Camp & Crunkilton, 1985). Although these acts provided financial support in response to societal demands, arguments regarding the

balance between purely academic and vocational education ensued (Boesel, Hudson, Deich and Masten, 1994). The placement of SBAE under the guise of vocational education was seen as vital; however, many felt that SBAE's heritage was in the scientific study of the methods thereby supporting the belief that SBAE should be considered an academic program (Shinn & Cheek, 1981).

Although SBAE programs were still vocational in nature, the 1963 National Vocation Act served to encompass more than just farming. The act was passed in an effort to broaden the scope of the original Smith-Hughes Act, which geared instruction in agricultural education toward students who intended on working in production agriculture (Bragg & Reger, 2000). This new act enabled greater flexibility by allowing students to gain vocational training in both farm and off-farm occupations. It also initiated the agricultural co-op program and pre-employment laboratory program which prepared students for off-farm agricultural occupations. Since passage of the Smith-Hughes Act, SBAE has fallen under the realm of vocational education; thus, any legislation that influenced vocational education indirectly influenced SBAE (Camp & Crunkiltol, 1985; Cano, 1998; Key & Price, 1987; Osborne & Dyer, 2000; Sanderson, 1996). The movement of vocational training from traditional production agriculture to more non-traditional programs has continued in SBAE curriculum (Asche, 1991; Bailey, Hughes & Moore, 2004; Borthwick, 1995; Case & Whitiker, 1998; El-Ghamrini, 1996; Grubb, 1996; Kalme & Dyer, 2000; Leas, ND; Straquadine, 1988; Trexler & Leonardo, 2004; Urquiola et al, 1997; Wigenbach, Gartin & Larenece, 1999).

Throughout the 60's and 70's the calls for integration of academics into vocational programs continued; however, efforts to integrate academic programs into

vocational programs were not forthcoming for almost three decades (Bragg, 1995). In 1983, the National Commission on Excellence in Education released *A Nation at Risk* with calls for sweeping reforms in public education and teacher training (National Commission, 1983). This report came to be known as the origin of current educational reforms (Frantz, Strickland & Elson, 1987; Resnick & Resnick, 1985). The Commission recommended four major areas for reform in education: graduation requirements should be strengthened so that every student establish a strong foundation in English, mathematics, science, social studies and computer science; schools and colleges should adopt higher and measurable standards for academic performance; the amount of time students spend engaged in learning should be significantly increased; and the teaching profession should be strengthened through higher standards for preparation and professional growth. To establish the relevance of SBAE curriculum under the pretext of strict academic performance, it became necessary to link SBAE curriculum with academic performance (Anderson & Boddy, 1985; Burke, 1991; Enderlin, Petrea, & Osborne, 1993; Enderlin & Osborne, 1992; Moss, 1986; Peasley & Henderson, 1992; Roegge & Russell, 1990; Whent & Leising, 1988).

The declarations made by *A Nation at Risk*, advocated for a diminished role in vocational education. The Office of Vocational and Adult Education within the USDE, countered with a report entitled, *The Unfinished Agenda* (National Commission on Secondary Vocation Education, 1984) which argued that students needed to combine academic and vocational experiences in their high school curriculum. Although *The Unfinished Agenda* created little impact in the 1980s, aid from Federal vocational

legislation throughout the 1990s enhanced the relationship between academic and vocational education.

In 1984, the Carl D. Perkins Vocational and Applied Technology Act was passed to help upgrade the nation's workforce and ensure that vocational training was available for all students (Paulter, 1999; Skinner and Apling, 1984). The primary objectives of this act were to improve the quality of vocational training, to modernize programs, and to expand access of vocational programs. The Perkins Act mandated that programs provide students with strong experience in and understanding of all aspects of the industry which they were preparing to enter. The Perkins Act was overseen by the United States Department of Education's Office of Vocational and Adult Education (OVAE) (Vocational Education, 2004). The Carl D. Perkins Vocational Education Act was re-authorized in 1990, again in 1998 as the Carl D. Perkins Vocational and Applied Technology Education Act and finally in 2006 as the Carl D. Perkins Career and Technology Education Act. With each re-authorization, new stipulations and requirements were added that enforced a greater commitment to accountability, performance standards, collaboration, ability to meet the demands of special populations, and local flexibility (Bragg & Reger, 2000). The legislation that resulted from these acts created a federal role in a broad based, general education that linked academic and vocational education programs (Bodily, Ramsey, Stasz & Eden, 1993). The Federal government also sought to integrate academic and vocational education through coherent sequences of courses (Hershey, Silverberg, Owens & Hulsey, 1998). The reauthorization of the Carl D. Perkins Act in 1998 renewed the importance of academic and vocational integration by directly calling for integrated curriculum including a common core of

reading, science, math, writing, communications and technologies (Bragg et al, 1999). By reinforcing curriculum integration, the federal government ensured that steps were being taken to restructure high schools for the twenty-first century, (Rosenstock, 1991).

Throughout the 1990s, vocational programs began to emphasize curriculum integration and technical (tech) prep programs. Career and Technology Education (CTE) emphasized integrating academics and technical education, linking secondary and post secondary programs, and achieving a smooth transition from secondary to post secondary programs (Silverberg, 1995). Ascher and Flaxman (1993) pointed out that shared philosophies of curriculum integration and tech prep allowed the profession to professionalize teaching by making pedagogy more active, student-centered and contextual rather than didactic and teacher centered. The importance of developing life skills was another facet of the SBAE curriculum that originated through vocational programs (Brock, 1992; Wigenback & Kahler, 1997).

In an effort to improve education in the United States, state and federal policy makers began developing state educational standards and setting national educational goals. Included among the recommendations were stricter standards for student assessment and more accountability for educators and local schools. These developments led to the signing of the controversial, No Child Left Behind Act of 2001 (NCLB) by President George W. Bush (United States Department of Education, 2001). According to this landmark legislation, the federal government required stronger school accountability, more stringent qualifications for teachers and an emphasis on programs and strategies with demonstrated effectiveness (Reeves, 2003). NCLB was conceptualized on four pillars: expanded local control and flexibility; doing what works based on scientific

research; accountability for results; and more options for parents. The main goal of NCLB was to help all students reach proficiency in English language arts/reading and mathematics by the year 2014 (USDE, 2004). Although CTE and SBAE are not addressed specifically in NCLB, it invigorated the continued debate regarding to the role of academics in CTE and challenged CTE programs to integrate more academics into its curriculum (Association of Career and Technical Education, 2003; Association of Career and Technical Education, 2004).

It has been recommended that SBAE teachers educate themselves regarding the threats and opportunities of the NCLB act (Martin, Fritzsche & Ball, 2006). It has further been suggested that SBAE teachers need to take advantage of the opportunities that are coupled with this reform such as integrating academics into SBAE curriculum in an effort to provide more rigor and relevance (Martin, et al, 2006). Integrating academics through the context of agriculture is beneficial for students because of the rigor that is added to SBAE curriculum and the relevance that is brought to the academic side of curricula (Balschweid, 2002; Balschweid. & Thompson, 2002; Boone, Gartin, Boone, Hughes , 2006; Conroy & Walker, 2000; Chiasson & Burnett, 2001; Dyer & Osborne, 1999; Enderlin & Osborne, 1992; Enderlin, Petrea, & Osborne, 1993; Hamilton & Swortzel, 2007; Layfield, Minor, & Waldvogel, 2001; Myers, Washburn & Dyer, 2004; Ricketts, Duncan, & Peake, 2006; Osborne & Dyer, 1988; Roegge & Russell, 1990; Thompson & Schumacher, 1998; Whent & Leising, 1988).

SBAE curriculum changed to meet the expanding careers within the industry of agriculture. The basic principle of SBAE to focus on production agriculture expanded to a curriculum that provided up-to-date technical skills and knowledge in agriculture,

conducted experiential learning activities, and involved students in leadership and personal development activities at the local, state, and national level (Agricultural Education – Early congressional Efforts, An Early Philosophy of Agricultural Education, ND). Educational reforms, such as No Child Left Behind (NCLB), that stress accountability through achievement scores primarily in the core curriculum academic areas are causing all elective programs to justify their existence at the secondary level (Case & Cloud, 2007). It has been posited that agricultural education programs will need to implement more core academics into their instruction as a way to meet educational requirements set forth by NCLB (Martin, et al, 2006). It has further been asserted that vocational education will maintain its indispensable place within the larger American educational establishment and that greater integration with, and prominence within, that larger framework of education will raise the academic achievement bar. (D’Amico, 2002). Finally, leaders in career and technology education have asserted that NCLB will continue to challenge the ability of career and technology education programs to integrate academics into instruction; thereby, providing students with a more well rounded secondary education (Association of Career and Technical Education, 2004).

Initiatives that influence instruction within SBAE

Instruction within SBAE has been influenced by initiatives that have been introduced by a multitude of organizations referred to as “Team Ag Ed.” Included in Team Ag Ed is the National FFA Organization, National Association of Agricultural Educators (NAAE), National FFA Alumni, National Association of Supervisors of Agricultural Education (NASAE), American Association of Agricultural Educators

(AAAE), Association for Career and Technical Education (ACTE), National Center for Agriscience & Technology Education (AgrowKnowledge), Collegiate FFA, The Consortium of Collegiate Agricultural Organizations, National Farm & Ranch Business Management Association (NFRBMEA, Inc.), National FFA Foundation, National Post Secondary Agricultural Student Organization (PAS), National Council for Agricultural Education and National Young Farmers Educational Association (NYFEA) (National FFA Organization, 2007). These groups created a united effort to promote local SBAE program success by introducing various initiatives that enable SBAE curriculum to meet societal and legislative needs of the future (National FFA Organization, 2009). High priority on the list of needs within SBAE was the development of curriculum that would meet societal and legislative demands.

Improving SBAE curriculum has been an ongoing process since its inception. Various initiatives have attempted to address not only the curriculum being taught within the classroom, but also to whom this curriculum was being taught. As initiatives were introduced, SBAE curriculum evolved to better fit the demands of legislative, industry and societal needs. To accommodate all students, it was recommended that programs focus less on production agriculture and more on contemporary, nonfarm areas within the agricultural sciences (Knight, 1987). In the State of Texas, “Production Agriculture I, II, III and IV” courses were restructured into semester courses that specialized in one particular area within agriculture (Texas Education Agency, 1987). The State Board of Education became involved when “an ultimatum was handed down to the Agricultural Education Division of the Texas Education Agency: Either do something to fix the program, or it will be done for you” (Tatliff-Reuwer, 1987, p. 8). The initiative that

followed, although forced by state leaders, created a change in the structure of SBAE curriculum. This change created positive impacts on SBAE including higher enrollment of students in general and higher minority numbers (Norris & Briers, 1987). This change also emphasized the fact that female students tended to concentrate on specialized SBAE curriculum; thus, recommendations were made that more specialized programs be developed within SBAE curriculum (Bell and Fritz, 1992).

This example illustrates that change was inevitable and beneficial for SBAE programs. In 1999, *Reinventing Agricultural Education for the year 2020* (RAE) was introduced as an opportunity for SBAE to shape the future by meeting fundamental needs of agriculture (National Council, 1999). The RAE initiative redefined SBAE by stating that SBAE is a field that encompasses the production of agricultural commodities including food, fiber, wood products, horticultural crops, and other plant and animal products. The RAE initiative also emphasized

“financing, processing, marketing, and distribution of agricultural products; farm production, supply and service industries; health, nutrition and food consumption; the use and conservation of land and water resources; development and maintenance of recreational resources; and related economic, sociological, political, environmental, and cultural characteristics of the food and fiber system” (p. 2).

The vision statement for RAE, “Agricultural education envisions a world where all people value and understand the vital role of agriculture, food, fiber and natural resources systems in advancing personal and global well-being” (p. 2), supports the four goals that were set into motion by the introduction of this initiative: an abundance of highly motivated, well-educated teachers in all disciplines, pre-kindergarten through adult, that will provide agriculture food, fiber and natural resources systems education; all students will have access to seamless lifelong instruction in agriculture, food, fiber and natural

resources systems through a wide variety of delivery system and educational settings; all students will be conversationally literate in agriculture, food, fiber and natural resources system; and partnerships and strategic alliances will ensure a continuous presence of education in and about agriculture, food, fiber and natural resources systems (Conroy, 2000). RAE and its impact on SBAE curriculum is representative of the transformations that occurred throughout the 1990's. It also represents the attitude of change that occurred as a result of societal demands on education. As environmental and international agricultural issues came into focus, SBAE curriculum began the process of updating curriculum in order to meet the current societal demands (Alonge & Martin, 1995; Artiles, 2003; Marshall, Flowers and Moore, 2007; Marshall & Herring, 1991; Odell, Williams, Lawrence, Gartin & Smith, 2002; Torres, 2002; Wade, 2000; Williams, 1999; Williams & Dollisso, 1998; Wise, 1997; Zhai & Sheer, 2002).

Shortly after RAE was introduced to secondary agricultural education, another initiative was introduced that revolutionized the concept of SBAE. In 1999, the National FFA Organization began a major initiative that would allow SBAE curriculum to better prepare young people for success in life (National FFA Organization, 2009). Prior research ascertained that agricultural education students who participated in FFA activities had a self-perceived increase in their leadership skills (Bass & Avolio, 1994; Bennis, 1989; Dormandy & Severs, 1994; Greene, 1992; Kouzes & Posner, 1987; Morgan, 2004; Morgan & Rudd, 2006; Ricketts & Newcomb; Rickett & Rudd, 2002; Rutherford, Townsend, Briers, Cummins, & Conrad, 2002; Townsend & Carter, 1983; Vaughn & Moore, 2000; Wingenback, 1995); thus, *Lifeknowledge*® was created. The primary purpose of *Lifeknowledge*® was to develop a curriculum that teaches leadership skills using “in-the-classroom” rather than “out-of-classroom” activities.

Lifeknowledge® provided lesson plans for SBAE teachers that allowed them to infuse premier leadership, personal growth and career success into all aspects of the agricultural education program (Seth Derner, 1994). *Lifeknowledge*® also provided SBAE teachers with practical learning strategies and corresponding instructional materials that allowed and encouraged SBAE students to develop skills needed in the real world. The elements of *Lifeknowledge*® represented the social norms within agricultural education leadership and could be reflected in the current condition of SBAE curriculum (Rudd & Hillison, 1995). The development and implementation of *Lifeknowledge*® is a prime example of how initiatives were created in an effort to renovate SBAE curriculum in an effort to meet the demands of society and legislation. *Lifeknowledge*® was a perfect example of this effort because it pushed SBAE teachers to formalize the teaching of leadership, interpersonal communications, and life skills (Case & Whitaker, 1998; Lockaby, 1987; Lockaby & Vaughn, 1999).

As agricultural education professionals struggled to make the transformations that were being demanded by society and legislation, the need for a solid foundation within SBAE curriculum became apparent. In 2002, the National Council for Agricultural Education and the U.S. Department of Education, with cooperation from the National FFA organization and the National Vocational Agricultural Teachers Association introduced *Local Program Success (LPS)* as a national initiative to build quality SBAE programs (Armbruster, 2002). Included in *LPS* were seven key components that aided SBAE teachers by providing core tools and strategies to help strengthen local programs (National Council for Agricultural Education, 2000). The seven key components were instruction (contextual learning), supervised agricultural experience program (work-based learning), FFA, becoming a manager of resources, marketing, professional growth, and

community based program planning (National FFA, 2008). *LPS* connects to national reports such as the U.S. Labor Secretary's Commission on Achieving Necessary Skills, which emphasize that SBAE teachers should prepare students for success beyond the classroom (National Council for Agricultural Education, 2000). By strengthening local programs through *LPS*, agricultural education professionals were able to justify changes in curriculum that would impact the intended outcome of SBAE.

LPS reiterated the need for quality programs and led the way with the 2005 *10x15 Long Range Goal for Agricultural Education* that was launched by the National Council for Agricultural Education (The Council, 2005). The *10x15 Long Range Goal for Agricultural Education* has two primary functions: create new programs in communities not yet served by SBAE and FFA, and ensure the quality and high performance of current programs by providing personal, academic and career education within the context of agriculture. The *10x15 Long Range Goal for Agricultural Education* initiative employed eight, high-priority initiatives to help advance SBAE programs successfully into the future (The Council, 2005). Among these initiatives were: program standards; link food, agriculture and natural resources content standards to national academic content standards; develop multiple agricultural education designs; program data reporting; agriculture education recruitment; agriculture education advocacy strategy; agriculture education brand strategy; and program funding strategy. Each of these strategies enables SBAE programs to serve students through an integrated model of classroom/laboratory instruction, experiential learning, and leadership and personal skill development.

In an effort to identify "quality" in SBAE programs, the need for program assessment became apparent; thus, in the spring of 2007 the National Council for

Agricultural Education introduced *National Quality Program Standards for Secondary (Grades 9-12) Agricultural Education (NPQS)* in the spring of 2007. This initiative was created to provide consistent delivery of high quality SBAE programs across the country. In particular, the initiative focused on relevant instruction, rigorous and clear goals, continuous program improvement and development of essential skills for student success (The Council, 2007). NPQS established a series of quality indicators/questions which defined or assessed different standards that would enable SBAE professionals to assess the intended outcome of SBAE curriculum. Seven standards were established and used as a model of quantitative characteristics for the development, management and assessment of SBAE programs: Program design and instruction; experiential learning; leadership development; school and community partnerships; marketing; certified agriculture teachers and professional growth; and program planning and evaluation. Using this system, reviewers could rate the quality indicator based upon the level of criteria met, and then use a scale ranging from 0 (non-existent) to 4 (Exemplary) to establish the program ratings based on significant quality indicators. Not only did NPQS enable SBAE professionals to assess programs, it served as a support system for revising SBAE curriculum. NPQS also led the way for the development of new initiatives that would facilitate SBAE curriculum. These initiatives would originate from the demands of society and educational legislation.

The first of these new initiatives was the *Curriculum for Agricultural Science Education (CASE)* which arose from the National Council for Agricultural Education's effort to develop programs that would encourage program growth and enhancement through rigorous and relevant curriculum while at the same time, meet the demands of

educational legislation such as NCLB (The Council, 2007). In an effort to develop national student curriculum and teacher training course materials in SBAE, The National Council for Agricultural Education entered into collaboration with *Project Lead the Way* which focused on hands-on project and problem-based learning to add rigor and relevance to academic curriculum (The Council, 2007). This collaboration also emphasized the importance of critical thinking which researchers have identified as an important element of SBAE curriculum (Cano, 1990; Cano & Newcomb, 1990; Cano & Martinez, 1989; Edwards & Briers 2004, Parr & Edwards, 2004; Torres & Cano, 1995; Ware and Kahler, 1988). Key leaders have noted that “Agricultural education has a golden opportunity to shape the future, and this new curriculum will contribute to our strategic goal of having 10,000 quality agricultural education programs in operation in this country by the year 2015” (Allan & Sulser, 2007, p. 1). *CASE* aimed to address 11 objectives including academic alignment with *Science, Technology, Engineering and Mathematics (STEM)*, modeling based on the agricultural, food and natural resources (AFNR) pathways for career clusters, and presenting rigorous and relevant content that will enable students to become successful at the post secondary level. *CASE* is in the pilot testing stage of development; however, this initiative justifies the constant effort that SBAE professionals place on curriculum development.

By emphasizing education through the context of agriculture, the SBAE curriculum component continues to introduce students to the importance of agriculture to society. It also allows SBAE teachers to encourage students to consider a career in the industry of agriculture which is becoming more and more important as students search for careers (Ellis & Letourneau, ND; Esters & Bowen, 2004; Helm & Straquidine, 2000;

Oleksy, 2001; Rayfield, 2008). Another advantage of teaching students through the context of agriculture is the exposure they receive through supervised agricultural experience (SAE) programs. SAEs allow students to explore entrepreneurship, learn responsibility, and develop skills that will be vital throughout their lives (Barrick, Hughes, & Raker; 1991; Camp, Clarke & Fallon, 2000; Case and Whitaker, 1998; Dyer & Osborne, 1995; Dyer & Osborne, 1996; Retallick & Martin, 2004; Retallic & Martin, 2005; White & Pals, 2004).

Each of these initiatives has had, and continues to have, a major influence on SBAE curriculum development. Whether proactive or reactive in nature, each initiative was developed to meet demands set by society, industry and educational legislation.

Summary

The development of SBAE curriculum has evolved throughout history. Jefferson's two-track education system introduced the first concept of academic versus vocational training. The Morrill Act allowed SBAE to become more of an applied study to prepare for work (Vocational Education). The Committee of Ten de-emphasized SBAE by insisting that all students be taught college prep programs. The Smith-Hughes Act introduced SBAE as vocational training in farming. The Vocational Education Act of 1963 introduced SBAE as vocational training for more than just farming. Initiatives such as *A Nation at Risk* challenged SBAE by emphasizing the need for more academics. Resulting reforms began introducing the integration between academics and vocational education. Finally, the Carl D. Perkins Act introduced a broader definition to vocational education and enabled SBAE to progress in secondary schools. Currently, multiple

initiatives have been introduced that allow for the evolution of SBAE curriculum. By meeting the demands set forth in these initiatives, SBAE teachers can proffer a curriculum that is capable of meeting societal needs and legislative demands.

CHAPTER III

METHODOLOGY

Purpose of the Study

The purpose of this study was to identify if a discrepancy exists between various agricultural education professionals' perceptions regarding the purpose and current outcome of school-based agricultural education (SBAE) curriculum.

Research Objectives

The following research objectives were used to guide this study:

1. Describe agricultural education professionals by role in agricultural education, sex, age, years of experience in agricultural education, regional locality and highest educational degree attained.
2. Describe the perceptions of agricultural education professionals regarding the purpose of SBAE curriculum.
3. Describe the perceptions of agricultural education professionals regarding the current outcome of SBAE curriculum.
4. Describe discrepancies between perceptions of agricultural education professionals regarding the purpose and current outcome of SBAE curriculum.
5. Describe differences that occur in perceptions of agricultural education professionals regarding purpose of SBAE curriculum among different roles within agricultural education and regional locale.
- 6.

Research Design

This study was descriptive in nature and sought to describe perceptions of agricultural education professionals regarding the purpose and current outcome of SBAE curriculum using survey methods. This type of research “uses questionnaires and interviews to gather information from groups or subjects” (Ary, Jacobs, Razavieh and Sorensen, 2006, p. 31). In particular, this study sought to explain differences between the role of agricultural education professionals within the agricultural education profession and regional locality as they pertain to purpose of SBAE curriculum. Descriptive research of this type has no manipulation of variables; therefore, it can have no attempt to establish causality (Ross, 1999).

This study had two dependent variables: the perception regarding the purpose for SBAE curriculum and the perception regarding current outcome of SBAE curriculum. The independent variables for the study included the role of agricultural education professionals within agricultural education and regional locale of the participants.

Campus Institutional Review Board

Campus Institutional Review Board (IRB) approval was obtained for this study on April 1, 2009 (Appendix A). This research did not pose greater than minimal risk, involve statutory requirements for IRB review, and was not FDA regulated or involve prisoners; therefore, it was eligible for exemption from federal IRB requirements and was in compliance with established standards set forth by the University of Missouri. Participants were notified during each contact that their participation in this study was completely voluntary and confidential.

Population

The target population for this national study was agricultural education professionals ($N = 13,049$). The stratified sample used in this study included homogeneous subgroups of SBAE teachers ($n = 12,701$), teacher educators who concentrate on SBAE teacher development ($n = 218$), and state agricultural education program leaders who are engaged with continuing professional development efforts of SBAE teachers ($n = 130$). Stratifying samples assures that all key subgroups within a population are represented and allows the researcher to study the differences between subgroups (Ary, Jacobs, Razavieh & Sorensen, 2006). Because the subgroups of this study had different population sizes, stratified sampling was used. Stratifying samples is noted to have more statistical precision than simple random sampling (Trochim, 2006). Random samples were selected from each subgroup using Randomizer.org. Based on recommendations from Krejcie and Morgans (1970), 610 subjects were randomly selected for this study. Of these, 373 were SBAE teachers at the secondary level, 140 were teacher educators and 97 were state agricultural education program leaders. Information related to population and sample sizes are summarized in Table 1. Because all participants were chosen randomly within each subgroup, this study was considered probabilistic; thus, findings can be inferred back to the target population. Teacher educators on the researcher's committee were purposely excluded from the sample.

Table 1

Agricultural Education Professionals (N = 13,049)

Subgroup	Total Population	Sample Needed
SBAE teachers	12,701	373
Teacher educators concentrating on agricultural education	218	140
State agricultural education leaders	130	97

The frame for each subgroup was provided by the National FFA Organization after permission was requested (Appendix B) and received (Appendix C). The National FFA Organization maintains multiple frames including teacher educators, SBAE teachers, and state agricultural education program leaders. These frames are released for research purposes only and each request is scrutinized before approval and permission are given. As per their research policy, a non-disclosure statement was completed and filed with the National FFA Organization (Appendix D).

Different types of error can be expected when using a random sampling (Ary, et al, 2006); however, various measures were taken to minimize the amount of error that occurred. Selection error occurs when subjects have a greater probability of being included in the sample than others (Ary, Jacobs, Razavieh, & Sorensen, 2006; Trochim, 2006). To reduce this error, the frame was scrutinized for accuracy and completeness and corrections were made when necessary. Frame error was addressed by purging each list of duplications. Sampling error is the estimate of the extent to which the sample may

differ from the population (Trochim, 2006) and was addressed by using random sampling within each of the three subgroups.

Instrumentation

The *Purpose and Current Outcome of SBAE Curriculum Instrument* (Appendix E) was developed because email questionnaires have the advantage of quicker returns, lower non-response to individual items, cost effectiveness and timelines of responses (Dillman, 2000). Hosted Survey™ was used to create and distribute the online questionnaire because of its affordability, design options and customer service.

The *Purpose and Current Outcome of SBAE Curriculum Instrument* was developed after a review of literature. The questionnaire was comprised of three sections. Section I assessed the perceptions of agricultural education professionals regarding the purpose of SBAE curriculum. A total of 18 items were included in this section. The first 17 items asked participants to use the following five point Likert-type scale: 1 = definitely disagree, 2 = disagree, 3 = uncertain, 4 = agree and 5 = definitely agree. The last item in this section was an open-ended question asking respondents to list other purposes of SBAE curriculum that were not included in the previous thematic areas. Section II elicited perceptions of agricultural education professionals regarding the current outcome of SBAE curriculum. There were 18 items included in this section. The first 17 items asked participants to use the following five point Likert-type scale: 1 = definitely disagree, 2 = disagree, 3 = uncertain, 4 = agree and 5 = definitely agree. The last item in this section was an open-ended question asking participants to list other perceptions as to the current outcome of SBAE curriculum. Section III solicited

professional characteristics including age, sex, years of experience in agricultural education, regional locality, community size and educational level. Sex and age were open-ended questions while the remaining characteristics information were forced choice items. Because of a technical glitch with HostedSurvey™, community size information failed to produce any information; therefore, it was removed from the study.

Validity and Reliability

Huitt, Hummel and Kaeck (2001) noted that collecting data, quantifying data, making judgments and developing an understanding of the data raises questions regarding validity and reliability. Validity is the “extent to which an instrument measured what it claimed to measure” (Ary, et al, 2006, p. 243). Face validity is used to determine if the test “looks valid” to participants of the study (Anastasi, 1988). Content validity is based on the extent to which a measurement reflects the specific intended domain of content (Carmines & Zeller, 1991). Face and content validity of the instrument were established by a panel of experts (Appendix F) consisting of five teacher educators who were knowledgeable in developing instruments and who had extensive research experience within agricultural education. Each panel member was contacted via email (Appendix G) on March 4, 2009 asking if they would be willing to serve as a member of a panel of experts for this study. All five agreed to serve on the panel and on March 11, 2009 a hard-copy of the *Purpose and Current Outcome of SBAE Curriculum Instrument* was mailed along with a letter explaining their role as a panel member (Appendix H). On March 18, 2009 each member was contacted via email (Appendix I) and given the hyperlink to the online version of the *Purpose and Current Outcome of SBAE Curriculum*

Instrument. Suggestions and comments offered by the panel were incorporated into the final version of the instrument. Suggestions ranged from grammatical errors to clarification issues regarding the meaning of specific items.

The ability of research to be consistent over a period of time is what makes it reliable (Joppe, 2000). For an instrument to be reliable, it must have the ability to repeat a measurement, stabilize the measurement over time and provide similar measurements within a given time period (Kirk & Miller, 1986). Because the variables will be used for subsequent predictive analyses, it is imperative that they be reliable (Santos, 1999).

A pilot test was used to determine the reliability of the *Purpose and Current Outcome of SBAE Curriculum Instrument*. The pilot group ($N = 40$) was purposefully-selected individuals including SBAE teachers, state agricultural education program leaders and teacher educators that were not a part of the randomly selected sample. Each of these members was chosen because they were similar to the subjects chosen for this study and had similar experiences within the three different agricultural education roles. A test-retest was used to establish reliability with this instrument (Trochim, 2006). On April 7, 2009 participants of the pilot test were administered the *Purpose and Current Outcome of SBAE Curriculum Instrument* and asked to complete sections I and II. The email that accompanied the questionnaire explained the purpose of the pilot test and included a hyperlink to HostedSurvey™ (Appendix K).

There was a 90% response rate ($n = 36$) for the first phase of the test-retest pilot. After a two week period, the same instrument was administered to the 36 original respondents (Appendix L). After two weeks, 94% of the original respondents ($n = 34$) had responded a second time. Efforts were made to contact the remaining two

respondents by phone; however, no response was received. The final completion rate of the test-retest was 34 respondents. Spearman's Rho correlation was calculated to establish the reliability of perceptions regarding purpose of SBAE curriculum variables (see Table 2) and perceptions regarding current outcome of SBAE curriculum variables (see Table 3). Individual items showed a coefficient of stability score ranging from .80 to .98. Each of the items was deemed reliable according to Nunnally (1978).

Table 2

Coefficient of Stability for Purpose of SBAE Curriculum Instrument (n = 34)

	<i>r</i>
Teach occupational skills	.86
Provide industry certification/licensing	.86
Integrate academic skills in the contest of agriculture	.84
Teach agricultural literacy	.93
Encourage wise management of the environment	.81
Increase awareness of global agriculture	.86
Cultivate student entrepreneurship	.87
Teach traditional production agriculture	.80
Teach non-traditional agriculture	.91
Prepare students for technical schools	.92
Prepare students for college/university	.90
Prepare students for careers in agriculture	.91
Develop higher-order thinking skills	.93
Develop interpersonal communication skills	.88
Develop life skills	.81
Teach personal development	.87
Teach leadership skills	.98

Table 3

Coefficient of Stability for Current Outcome of SBAE Curriculum Instrument (n = 34)

	<i>r</i>
Teach occupational skills.	.84
Provide industry certification/licensing.	.96
Integrate academic skills in the contest of agriculture	.89
Teach agricultural literacy	.86
Encourage wise management of the environment	.86
Increase awareness of global agriculture	.88
Cultivate student entrepreneurship	.81
Teach traditional production agriculture	.89
Teach non-traditional agriculture	.91
Prepare students for technical schools	.98
Prepare students for college/university	.89
Prepare students for careers in agriculture	.82
Develop higher-order thinking skills	.86
Develop interpersonal communication skills	.88
Develop life skills	.91
Deach personal development	.85
Teach leadership skills	.88

Data Collection

Using the Internet for data collection has greatly impacted the field of survey research (Cook & Thompson, 2000; Dillman, 2000; Dillman & Bowker, 2000; Dillman, Torotra & Bowker, 1998; Schaffer & Dillman, 1998). Internet questionnaires have the advantage of quicker returns, lower non-response to individual items, and more detailed responses to open-ended questions (Dillman, 2000). This study used the internet survey site, HostedSurvey™, to collect data from participants.

The National FFA Organization provided names and physical addresses; however, no email address could be provided as per their policy. Once the frame was selected, email addresses were located using AAAE, NAAE, NASAE, and state SBAE directories, as well as state FFA, local school, and university web sites.

Based on the research of Mehta and Sivadas (1995), Sheehan and Hoy (1999) and Dillman (2004), samples were pre-notified using an email message (Appendix M) to inform them of their selection to participate in this study. Initial contact with the participants of this study occurred on April 20, 2009. The email message emphasized the importance of their participation and notified them of the upcoming email that would contain the HostedSurvey™, hyperlink. The first invitation (Appendix N) to participate in the study was emailed to all participants on April 27, 2009. Following the recommendations of Cook, Heath and Thompson, (2000) and Shannon, Johnson, Searcy and Alan (2002), this first communication was personalized with a specific salutation and provided the basic elements in the cover letter including a clear overview of the study's purpose, assurances of confidentiality and privacy, a hyperlink to HostedSurvey™ and contact information of David Frazier and Dr. Anna Ball in case they had question. The

email message also explained that participation in the study was voluntary and within the guidelines of IRB policies. Non-response error can be addressed by getting as many returned responses as possible (Miller & Smith, 1983). The response rate to the original email was 31% ($n = 189$) which according to Miller and Smith (1983) warranted concern. One week later, a second email message was sent to those that had not responded (Appendix O). This second email reiterated the importance of the study, referenced the hyperlink to HostedSurveyTM and encouraged participants to complete the instrument. The response rate after the second email message was 49% ($n = 299$). A third contact was made on May 12, 2009 that was similar to the second (Appendix P); however, it was a simple reminder to complete the instrument. The response rate after the third contact was 66% ($n = 405$). The final contact was made on May 19, 2009 and was similar to the third reminder (Appendix Q). The final response rate for the study was 80% ($n = 488$). Dillman (2004) noted that most non-response was due to oversight rather than refusal.

To ensure that non-response error was not a threat to external validity, multiple efforts were made to contact participants and encourage them to participate in the study. All emails were personalized and included a hyperlink to the online instrument. Each of these steps was in accordance with recommendations set forth by Dillman (2004). Even though efforts were made to avoid non-response error, a proportional, stratified, random sampling of non-respondents were called by telephone and encouraged to complete the questionnaire. Using recommendations of Miller and Smith (1983), 45 non-respondents were randomly selected from each subgroup. Table 4 shows the number of responses ($n = 488$) that were acquired during the original response time.

Table 4

Original Response Rate (n = 533)

	Original Sample (n = 610)	Responses (n = 488)
SBAE teachers	373	277
Teacher Educators	140	124
State Agricultural Education Leaders	97	84
Total	610	288

The percentage of respondents in each subgroup is illustrated in Figure 5. SBAE teachers represented 57% of the original respondents, teacher educators represented 26% and state agricultural education program leaders represented 17%.

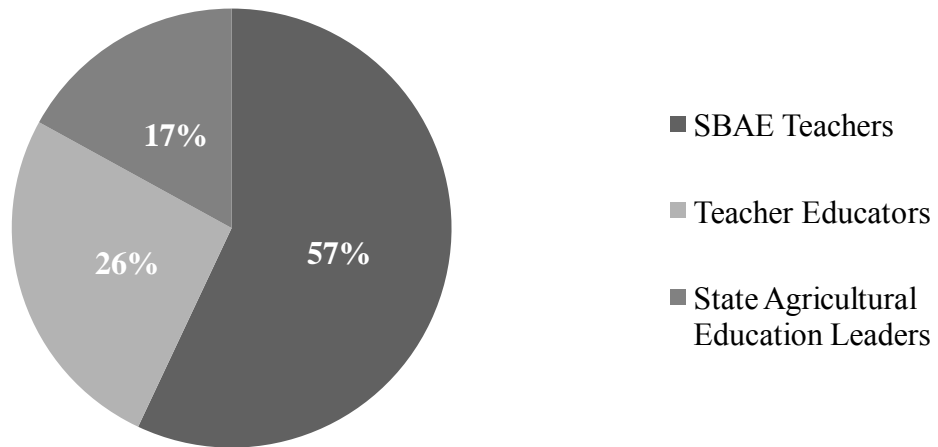


Figure 5. Original Response Rate

Using the percent of total responses rate for each subgroup a proportional, stratified sampling was chosen from the non-respondents that would be proportional to the original respondents (see Table 5). Because of the unequal sizes of subgroups,

selecting 45 non-respondents and comparing them to 45 respondents of equal proportions allowed the comparison of non-respondents and respondents to be more significant.

Table 5

Proportional, Stratified Sampling of Non-respondents (n = 533)

	Respondent % (n = 488)	Non-respondents selected (n = 45)
SBAE teachers	57	25*
Teacher Educators	26	12*
State Agricultural Education Program Leaders	17	8*
Total	100	45

*Note: Based on 45 non-respondents being chosen

The professional characteristics from the 45 non-respondents were then compared to 45 randomly selected, proportional, stratified respondents. Table 6 shows the comparison of professional characteristics between respondents and non-respondents. Further comparison between the two groups was done using Chi-Square for sex, major role in agricultural education and highest degree attained (see Table 7). Independent sample t-tests for age and years of experience in agricultural education were also calculated (see Table 8). The alpha level of 0.05 was set *a priori* and equal variances were assumed.

Table 6

Comparison of Respondent (n = 45) and Non-respondent (n = 45) Professional Characteristics

	Respondents (n = 45)	Non- respondents (n = 45)	Difference
Sex			
Female	14	12	2
Male	31	33	2
Purpose			
SBAE Teachers	25	25	0
Teacher Educators	12	12	0
State Agricultural Education Program Leaders	8	8	0
Highest Degree Attained			
High School	0	0	0
Associates	1	0	1
Bachelors	24	23	1
Masters	7	10	3
Doctorate	13	12	1
Other	0	0	0
Mean Age	45.24	44.93	0.31
Mean Years of Experience	19.58	18.40	1.18

Table 7

Comparison of Respondents (n = 45) and Non-Respondents (n = 45) Regarding Sex, Purpose in Agricultural Education and Highest Degree Earned

	Chi-Square
Sex	.01*
Role in agricultural education	.01*
Highest degree attained	.01*

*Note: *Significant at $p \leq 0.05$*

Table 8

Independent T-test Comparison of Respondents and non-respondents regarding Age and Years of Experience in Agricultural Education (n = 45)

	<i>M</i>	<i>SD</i>	<i>t-value</i>	<i>df</i>	<i>P</i>
Age					
Responders	41.57	10.99	0.82		
Non-responders	40.02	9.57	1.27	44	.01*
Years of Experience in Agricultural Education					
Responders	29.72	10.23	0.49		
Non-responders	28.91	10.63	0.69	44	.01*

*Note: *Significant at $p \leq 0.05$*

No significant difference was shown in any of these professional characteristics; therefore, it was concluded that no significant difference could be expected from respondents and non-respondents to items in sections I and II of the *Purpose and Current*

Outcome of SBAE Curriculum Instrument. The 45 non-respondents were then combined with respondents to give a final respondent count of 533 which represented an 87.4% return rate. Table 9 show the final return per individual subgroups.

Table 9

Final Response Rate (n = 533)

	Original Sample (n = 610)	Responses (n = 533)
SBAE teachers	373	310
Teacher Educators	140	127
State Agricultural Education Leaders	97	96
Total	610	533

Figure 6 illustrates the final response rates for the study. SBAE teachers had 58% of the responses, teacher educators had 24% and SBAE teachers represented 18% of the responses.

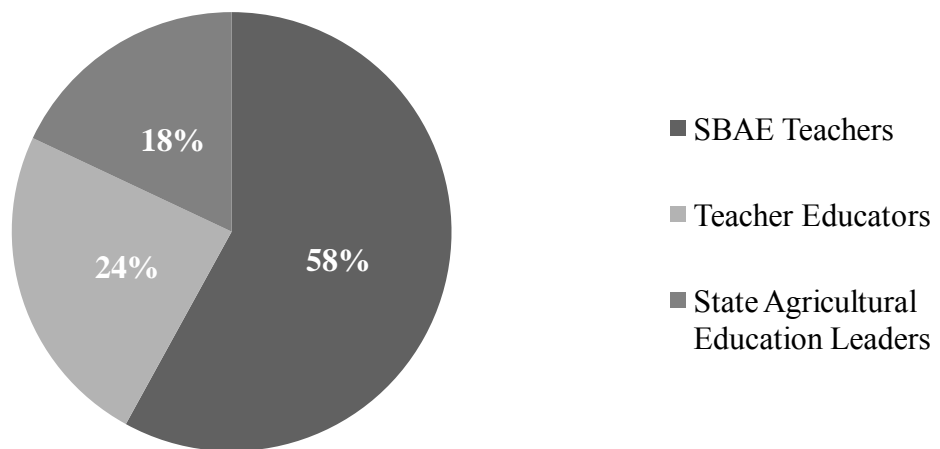


Figure 6. Final Response Rate

Data Analysis

Data were analyzed using SPSS 16.0. The alpha level of .05 was established *a priori*. Cohens (1988) descriptors were used to describe the magnitude of relationships reported (Appendix R).

Objective One

Objective one sought to describe agricultural education professionals by age, sex, years of experience in agricultural education, regional locality and highest educational degree attained. Descriptive statistics were reported on both measures of central tendency and measures of variability. Sex, regional locale, role in agricultural education and highest degree attained were categorical in data, so frequency counts and percentages were reported. Mean scores, standard deviations and ranges were generated for the continuous data of age and years of experience in agricultural education.

Objective Two

The purpose of objective two was to describe the perceptions of agricultural education professionals regarding the purpose of SBAE curriculum. Mean scores, standard deviations and ranges were generated for responses of agricultural education professionals to all items found in section I of the *Purpose and Current Outcome of SBAE Curriculum Instrument*.

Objective Three

The purpose of objective three is to describe the perceptions of agricultural education professionals regarding the current outcome of SBAE curriculum. Mean scores, standard deviations and ranges were generated for responses of agricultural

education professionals to all items found in section II of the *Purpose and Current Outcome of SBAE Curriculum Instrument*.

Objective Four

The purpose of objective four was to describe the discrepancy between perceptions of agricultural education professionals regarding the purpose and current outcome of SBAE curriculum. Because of the large number of purposes being investigated, it was imperative to establish a ranking order that would identify where the largest discrepancies occurred; thus, identifying areas where the largest emphasis should be placed when revising. Using a discrepancy analysis allows polar opposites to be identified: what should be and what is (Borich, 1980). Using such an analysis allows for the effectiveness of a program or program areas to be identified. Borich further asserted that identifying a ranking order of discrepancies allows a program to identify areas where the greatest revision emphasis should be placed.

To identify the discrepancies that occurred between perceptions regarding the purpose and current outcome of SBAE curriculum, the mean weighted discrepancy score (MWDS) was calculated. To accomplish this, a discrepancy score for each purpose was calculated by taking the purpose score minus the current outcome score. A weighted discrepancy score was then calculated by multiplying the discrepancy score by the mean importance rating. Finally, a MWDS score for each purpose was calculated by taking the sum of the weighted discrepancy score and dividing by the number of observations for that purpose. The 17 purposes were then ranked for the total group and for each of the individual subgroups.

Objective Five

Because of the large number of factors being studied ($n = 17$), a factor analysis was performed on the responses to Sections I and II of the questionnaire. Factor analysis was used to uncover latent dimensions of a set of variables (Garson, 2009). Factor analysis also reduces a larger number of variables to a smaller number of factors and as such it does not assume a dependent variable. A Principal Component Analysis extraction method was used, as was a Varimax with Kaiser Normalization rotation component matrix. All 17 variables were loaded and a loading of 0.40 or higher was identified to confirm that independent variables identified *a priori* were represented by a particular factor (Raubenheimer, 2004). A Kaiser criterion was used for dropping the least important factors from the analysis. The Kaiser rule is to drop all components with Eigenvalues under 1.0 (Lance, Butts & Michels, 2006). The rotation of factors was used to improve meaningfulness, reliability, and reproducibility of factors (Ford, MacCallum & Tait, 1986). Table 10 shows the rotated component matrix that resulted from the factor analysis.

Table 10

Factor Analysis Rotated Component Matrix

Purpose	<u>Component</u>				
	1	2	3	4	5
Teach personal development	0.86				
Teach leadership skills	0.81				
Develop life skills	0.78				
Develop interpersonal communication skills	0.70				
Develop higher-order thinking skills	0.51				
Increase awareness of global agriculture		0.81			
Teach agricultural literacy		0.77			
Encourage wise management of the environment		0.76			
Teach non-traditional agriculture		0.42			
Prepare students for technical school			0.81		
Prepare students for college/university			0.69		
Develop student entrepreneurship			0.41		
Provide industry certification/licensing				0.84	
Teach occupational skills				0.75	
Teach traditional production agriculture					0.69
Integrate academic skills in the context of agriculture		0.46			-0.54

Note. Extraction Method: Principal Component Analysis
Rotation Method: Varimax with Kaiser Normalization

After consulting with committee members and analyzing the variables that loaded into each factor, the following names were given to the factors: Factor one was title

Personal Development and included the purposes of teach personal development, teach leadership skills, develop life skills, develop interpersonal communication skills, and develop higher order thinking skills. Factor two was titled *Agricultural Awareness* and included increase awareness of global agriculture, teach agricultural literacy, encourage wise management of the environment, teach non-traditional agriculture, and integrate academic skills in the context of agriculture. Factor three was titled *Post-Secondary Preparation* and included prepare students for technical school, prepare students for college/university, and develop student entrepreneurship. Factor four was titled *Teaching Vocational Skills* and included provide industry certification/licensing and teach occupation skills. Finally, factor five was titled *Agriculture as an Applied Science* and it was comprised of teach traditional production agriculture and integrate academic skills in the context of agriculture.

Because there was more than one dependent variable and because the dependent variables could not simply be combined, a multiple analysis of covariance (MANCOVA) was used to explain the differences that existed in agricultural educational professionals' perceptions regarding the purpose of SBAE curriculum among different roles in agricultural education and regional locale. Hotelling's trace was the test used because it is a multivariate test used in the case that there are two or more dependent variables (Hand, 1987). The five factors that were created with the factor analysis were considered the dependent variables and role in agricultural education and regional local were the independent variables. Prior research has implied that regional locale and role within agricultural education are variables that are significant when describing the purpose and outcome of SBAE curriculum (Jenkins, 2008; Retallick, 2006), therefore, sex, years of

experience, age and highest degree attained were variables that were controlled for when using MANCOVA to explain discrepancies that occur in agricultural educational professionals' perceptions regarding the purpose of SBAE curriculum among different roles in agricultural education and regional locale.

A factor analysis was not used in other objectives because data on each specific variable was needed to in order to establish a ranked order of discrepancies between purpose and current outcomes of SBAE curriculum.

Summary

The population of this study was agricultural education professionals and consisted of SBAE teachers, teacher educators and state agricultural education program leaders. The instrument used for the study was developed and based on extensive research regarding curriculum in SBAE. There were two dependent variables in this study: The perception regarding the purpose of SBAE curriculum and the perception regarding current outcome of SBAE curriculum. The independent variables for the study included sex, age, years of experience in agricultural education, role within agricultural profession and regional locale of the participants. Validity of the instrument was established by a panel of experts while reliability was established with a test-retest pilot group. A 0.05 Alpha level was established *a priori*. Non-response error was controlled by comparing randomly selected, proportional, stratified samples of respondents and non-respondents. Each objective was analyzed independently using SPSS 16.0. Finally, measurement errors were acknowledged and minimized to ensure that information gathered was true, reliable and valid

CHAPTER IV

FINDINGS

Purpose of the Study

The purpose of this study was to identify if a discrepancy exists between various agricultural education professionals' perceptions regarding the purpose and current outcome of school-based agricultural education (SBAE) curriculum.

Research Objectives

The following research objectives were used to guide this study:

1. Describe agricultural education professionals by role in agricultural education, sex, age, years of experience in agricultural education, regional locality and highest educational degree attained.
2. Describe the perceptions of agricultural education professionals regarding the purpose of SBAE curriculum.
3. Describe the perceptions of agricultural education professionals regarding the current outcome of SBAE curriculum.
4. Describe discrepancies between perceptions of agricultural education professionals regarding the purpose and current outcome of SBAE curriculum.
5. Describe differences that occur in perceptions of agricultural education professionals regarding purpose of SBAE curriculum among different roles within agricultural education and regional locale.

Population and Sample

The target population for this national study was agricultural education professionals ($N = 13,049$). The proportional, stratified sample used in this study included homogeneous subgroups of SBAE teachers at the secondary level ($n = 12,601$), teacher educators who concentrate on SBAE teacher development ($n = 218$), and state agricultural education program leaders who are engaged with continuing professional development efforts of SBAE teachers ($n = 140$). Table 11 summarizes the data of this particular population. Because the subgroups of this study had different population sizes, a stratified sampling was used. Random samples for the study were selected using Randomizer.org. Based on Dillman’s (2007) recommendations, 610 samples were randomly selected for this study. Of these 610 samples, 373 were SBAE teachers, 140 were teacher educators and 97 were state agricultural education program leaders. Because all participants were chosen randomly within each subgroup, this study was considered probabilistic; thus, findings can be inferred back to the target population.

Table 11

Subgroups of Agricultural Education Professionals (N = 13,049)

Subgroup	Total Population	Sample Needed
SBAE Secondary Teachers	12,601	373
Teacher Educators	218	140
State Agricultural Education Program Leaders	130	97
Total	13,049	610

Objective One

Objective one sought to describe agricultural education professionals by role of agricultural education professionals within agricultural education, age, sex, years of experience in agricultural education, regional locale and educational level.

Table 12 shows the age and years of experience of agricultural education professionals. Teacher educators had the highest mean in age ($M = 45.62$) followed by state agricultural education program leaders ($M = 42.63$) and SBAE teachers ($M = 40.75$). Teacher educators also had the most years of experience ($M = 20.58$). State agricultural education leaders reported the second most years of experience ($M = 19.36$) and SBAE teachers had the least experience ($M = 15.59$).

Table 12

Age and Years of Experience of Agricultural Education Professionals (n=533)

Characteristic	<i>M</i>	<i>SD</i>	<i>Range</i>
Age			
Teacher Educators	45.62	11.49	28-68
State Agricultural Education Leaders	44.74	12.68	23-72
SBAE Teachers	40.75	09.80	23-62
Total Sample	42.63	10.99	23-72
Number of Years Working in Agricultural Education			
Teacher Educators	20.58	12.02	03-45
State Agricultural Education Leaders	19.36	12.29	02-48
SBAE Teachers	15.59	08.97	01-36
Total Sample	17.56	10.63	01-48

Table 13 shows the professional characteristic information gathered regarding the role of agricultural educational professional in agricultural education. Fifty-eight percent ($n = 310$) were SBAE teachers, 24% were teacher educators and 18% reported to be state agricultural education program leaders.

Table 13

Agricultural Education Professionals' Role in Agricultural Education (n = 533)

Role in Agricultural Education	<i>f</i>	%
SBAE teachers	310	58
Teacher Educators	127	24
State Agricultural Education Program Leaders	96	18

Table 14 summarizes the data of sex for participants in this study. Of the 310 SBAE teachers 37% ($n = 113$) were female and 63% ($n = 197$) were male. Twenty-two percent ($n = 28$) of the 127 teacher educators were female and 78% ($n = 99$) were male. Of the 96 state agricultural education leaders, 26% ($n = 25$) were female while 74% ($n = 71$) were male. The total group of respondents ($n = 533$) was comprised of 31% ($n = 166$) females and 69% ($n = 367$) males.

Table 14

Sex of Agricultural Education Professionals (n = 533)

Characteristic	<i>F</i>	%
SBAE Teachers (<i>n</i> = 310)		
Female	113	37%
Male	197	63%
Teacher Educators (<i>n</i> = 127)		
Female	28	22%
Male	99	78%
State Agricultural Education Leaders (<i>n</i> = 94)		
Female	25	26%
Male	71	74%
Total Population (<i>n</i> = 533)		
Female	166	31%
Male	367	69%

Note: Mode $_{SBAE\ Teacher_gender} = male$; Mode $_{TE_gender} = male$; Mode $_{SAEL_gender} = male$; Mode $_{TP_gender} = male$

Regional locale was based on the six National Association of Agricultural Educators (NAAE) regions and encompassed six regions (see Table 15) (Appendix T). Thirteen percent (*n* = 69) of the respondents were from Region I encompassing the Western states. Region II, found in the Southwest, had the largest percentage of respondents with 25% (*n* = 135). Eight percent (*n* = 41) of the respondents were from Region III, the Midwest states and 23% (*n* = 123) were from Region IV which comprises

the North Central states. Region V is found in the Southern part of the U.S. and represented 15% ($n = 82$) of the respondents while Region VI, the Eastern States, had 16% ($n = 83$) of the total respondents. There were respondents from each of the fifty states in this study (Appendix U).

Table 15

Geographic Locality of Study Participants (n = 533)

Region	<i>F</i>	%
I – Western	69	13
II – Southwestern	135	25
III – Midwest	41	08
IV – North Central	123	23
V – Southern	82	15
VI – Eastern	83	16

Note: Mode_{Region} = II Southwestern

The educational level of study participants is shown in Tables 16 and 17.

Education attained by SBAE teachers included 1% ($n = 3$) associate degrees, 47% ($n = 146$) bachelor's, 50% ($n = 155$) master's and 2% ($n = 6$) doctorate. Teacher educators reported 1% ($n = 1$) bachelor's, 3% ($n = 4$) master's and 96% ($n = 122$) doctorate degrees. State agricultural education program leaders had 1% ($n = 1$) associate degree, 20% ($n = 19$) bachelor's, 66% ($n = 64$) master's, 11% ($n = 10$) doctorate and 2% ($n = 2$) other. As a group, participants reported less than 1% ($n = 4$) associate degrees, 31% ($n = 166$) bachelor's, 42% ($n = 223$) master's, 26% ($n = 138$) doctorate and less than 1% ($n = 2$) other.

Table 16

Highest Educational Level of Study Participants (n = 533)

Education Level	<i>F</i>	<i>%</i>
Total Population (n = 533)		
Associates	4	0.7
Bachelor's	166	31
Master's	223	42
Doctorate	138	26
Other	2	0.3

Note: Mode_{TP_education} = Masters

Table 17

Educational Level of SBAE Teachers (n = 310), Teacher Educators (n = 127) and State Agricultural Education Program Leaders (n = 96)

Education Level	<i>f</i>	<i>%</i>
SBAE Teachers		
Associates	3	1
Bachelor's	146	47
Master's	155	50
Doctorate	6	2
Teacher Educators		
Bachelor's	1	1
Master's	4	3
Doctorate	122	96
State Agricultural Education Leaders		
Associates	1	1
Bachelor's	19	20
Master's	64	66
Doctorate	10	11
Other	2	2

Note: Mode_{SBAE Teachers_education} = Masters; Mode_{TE_education} = Doctorate; Mode_{SAEL_education} = Masters;

Objective Two

Objective two sought to explain the perceptions of agricultural education professionals regarding the purpose of SBAE curriculum. Table 18 summarizes perceptions of the entire group of professionals regarding the purpose of SBAE

curriculum ($n = 533$). Scores on a 5-point Likert scale showed that agricultural education professionals, as a group, agreed with 14 of the 17 purposes with “teaching leadership skills” ($M = 4.29, SD = 0.52$) “developing life skills” ($M = 4.66, SD = 0.57$), “developing higher-order thinking skills” ($M = 4.65, SD = 0.52$), and “developing interpersonal communication skills” ($M = 4.65, SD = 0.53$) being their top choices for the purpose of SBAE curriculum. Participants were uncertain with “providing industry certification/licensing” ($M = 3.14, SD = 1.14$), “teaching traditional production agriculture” ($M = 3.83, SD = 0.89$), and “preparing students for technical schools” ($M = 3.95, SD = 0.89$).

Table 18

Agricultural Education Professionals' Perceptions of the Purpose of SBAE Curriculum
(*n* = 533)

	<i>M</i>	<i>SD</i>	Range
Teach leadership skills	4.69	0.52	2.00-5.00
Develop life skills	4.66	0.57	2.00-5.00
Develop higher-order thinking skills	4.65	0.52	2.00-5.00
Develop interpersonal communication skills	4.65	0.53	2.00-5.00
Teach personal development	4.62	0.59	1.00-5.00
Teach agricultural literacy	4.62	0.61	1.00-5.00
Integrate academic skills in the context of agriculture	4.56	0.63	1.00-5.00
Teach non-traditional agriculture	4.49	0.58	2.00-5.00
Encourage wise management of the environment	4.45	0.59	2.00-5.00
Increase awareness of global agriculture	4.45	0.63	2.00-5.00
Prepare students for careers in agriculture	4.40	0.70	2.00-5.00
Prepare students for college/university	4.40	0.67	2.00-5.00
Cultivate student entrepreneurship	4.19	0.71	2.00-5.00
Teach occupational skills	4.39	0.76	1.00-5.00
Prepare students for technical schools	3.95	0.89	1.00-5.00
Teach traditional production agriculture	3.83	0.89	1.00-5.00
Provide industry certification/licensing	3.14	1.14	1.00-5.00

Note. Scale: 1=definitely disagree, 2=disagree, 3=uncertain, 4=agree, 5=definitely agree.

SBAE teachers, as a subgroup, had similar perceptions (see Table 19), agreeing with the same 14 purposes. This group reported “teaching leadership skills” ($M = 4.70$,

$SD = 0.49$), “developing life skills” ($M = 4.65$, $SD = 0.58$), “developing interpersonal communication skills” ($M = 4.64$, $SD = 0.55$), and, “teaching agricultural literacy” ($M = 4.64$, $SD = 0.59$) as their top purposes for SBAE curriculum. They were uncertain about “providing industry certification/licensing” ($M = 3.12$, $SD = 1.14$), “teaching traditional production agriculture” ($M = 3.87$, $SD = 0.89$), and “preparing students for technical schools” ($M = 3.98$, $SD = 0.98$) being purposes of SBAE curriculum.

Table 19

SBAE Teachers' Perceptions Regarding Purpose of SBAE curriculum (n = 310)

	<i>M</i>	<i>SD</i>	Range
Teach leadership skills	4.70	.49	2.00-5.00
Develop life skills	4.65	.58	2.00-5.00
Develop interpersonal communication skills	4.64	.55	2.00-5.00
Teach agricultural literacy	4.64	.59	1.00-5.00
Develop higher-order thinking skills	4.63	.52	3.00-5.00
Teach personal development	4.61	.58	2.00-5.00
Integrate academic skills in the context of agriculture	4.52	.66	1.00-5.00
Teach non-traditional agriculture	4.49	.58	2.00-5.00
Encourage wise management of the environment	4.47	.59	2.00-5.00
Increase awareness of global agriculture	4.46	.63	2.00-5.00
Teach occupational skills	4.43	.71	1.00-5.00
Prepare students for careers in agriculture	4.40	.69	2.00-5.00
Prepare students for college/university	4.30	.64	2.00-5.00
Cultivate student entrepreneurship	4.14	.75	2.00-5.00
Prepare students for technical schools	3.98	.87	1.00-5.00
Teach traditional production agriculture	3.87	.89	2.00-5.00
Provide industry certification/licensing	3.12	1.14	1.00-5.00

Note. Scale: 1=definitely disagree, 2=disagree, 3=uncertain, 4=agree, 5=definitely agree.

Teacher educators, as a subgroup, agreed with 14 of the 17 purposes (see Table 20); however, they were uncertain about “teaching traditional production agriculture” (*M*

= 3.72, $SD = 0.89$) and “preparing students for technical schools” ($M = 3.76$, $SD = 0.99$). They disagreed that “providing industry certification/licensing” ($M = 2.72$, $SD = 1.09$) should be a purpose of SBAE curriculum. “Developing higher-order thinking skills” ($M = 4.65$, $SD = 0.58$), “developing interpersonal communication skills” ($M = 4.64$, $SD = 0.54$) and “developing life skills” ($M = 4.61$, $SD = 0.59$) were the most highly rated purposes by the teacher educators.

Table 20

Teacher Educators' Perception Regarding the Purpose of SBAE curriculum (n = 127)

	<i>M</i>	<i>SD</i>	Range
Develop higher-order thinking skills	4.65	.58	2.00-5.00
Develop interpersonal communication skills	4.64	.54	3.00-5.00
Develop life skills	4.61	.59	2.00-5.00
Teach agricultural literacy	4.60	.65	1.00-5.00
Integrate academic skills in the context of agriculture	4.58	.66	1.00-5.00
Teach personal development	4.55	.59	2.00-5.00
Teach leadership skills	4.55	.63	2.00-5.00
Teach non-traditional agriculture	4.46	.60	2.00-5.00
Encourage wise management of the environment	4.39	.56	3.00-5.00
Increase awareness of global agriculture	4.36	.64	3.00-5.00
Prepare students for careers in agriculture	4.36	.76	2.00-5.00
Prepare students for college/university	4.23	.72	2.00-5.00
Teach occupational skills	4.17	.95	1.00-5.00
Cultivate student entrepreneurship	4.17	.66	2.00-5.00
Prepare students for technical schools	3.76	.99	1.00-5.00
Teach traditional production agriculture	3.72	.89	2.00-5.00
Provide industry certification/licensing	2.72	1.09	1.00-5.00

Note. Scale: 1=definitely disagree, 2=disagree, 3=uncertain, 4=agree, 5=definitely agree.

Table 21 shows perceptions of agricultural education program leaders regarding the purpose of SBAE curriculum. These leaders rated “teaching leadership skills” ($M =$

4.81, $SD = 0.42$) as the highest purpose followed by “developing life skills” ($M = 4.77$, $SD = 0.49$), “developing higher-order thinking skills” ($M = 4.73$, $SD = 0.45$) and “teaching personal development” ($M = 4.73$, $SD = 0.59$). They were uncertain about “providing industry certification/licensing” ($M = 3.59$, $SD = 0.97$) and “teaching traditional production agriculture” ($M = 3.85$, $SD = 0.87$).

Table 21

State Agricultural Education Program Leaders' Perceptions Regarding the Purpose of SBAE curriculum (n = 96)

	<i>M</i>	<i>SD</i>	Range
Teach leadership skills	4.81	.42	3.00-5.00
Develop life skills	4.77	.49	2.00-5.00
Develop higher-order thinking skills	4.73	.45	4.00-5.00
Teach personal development	4.73	.59	1.00-5.00
Develop interpersonal communication skills	4.70	.46	4.00-5.00
Integrate academic skills in the context of agriculture	4.69	.47	3.00-5.00
Cultivate student entrepreneurship	4.69	.64	2.00-5.00
Teach agricultural literacy	4.59	.49	2.00-5.00
Teach occupational skills	4.56	.52	3.00-5.00
Teach non-traditional agriculture	4.55	.59	2.00-5.00
Increase awareness of global agriculture	4.52	.62	2.00-5.00
Prepare students for careers in agriculture	4.47	.65	2.00-5.00
Encourage wise management of the environment	4.44	.65	2.00-5.00
Prepare students for college/university	4.32	.69	2.00-5.00
Prepare students for technical schools	4.10	.79	2.00-5.00
Teach traditional production agriculture	3.85	.87	1.00-5.00
Provide industry certification/licensing	3.59	.97	2.00-5.00

Note. Score: 1=definitely disagree, 2=disagree, 3=uncertain, 4=agree, 5=definitely agree.

Objective Three

Objective three explained the perceptions of agricultural education professionals regarding the current outcome of SBAE curriculum (see Table 22). As a group, the agricultural education professionals agreed that SBAE was currently “teaching leadership skills” ($M = 4.18, SD = 0.80$), “teaching occupational skills” ($M = 4.00, SD = 0.81$), “teaching agricultural literacy” ($M = 4.04, SD = 0.84$), “developing interpersonal communication skills” ($M = 4.03, SD = 0.84$), “developing life skills” ($M = 4.00, SD = 0.90$), and “teaching personal development” ($M = 4.00, SD = 0.90$). These agricultural education professionals were uncertain if SBAE curriculum was currently meeting 10 of the 17 categories and they disagreed with the statement that the current outcome of SBAE is “providing industry certification/licensing” ($M = 2.74, SD = 1.03$).

Table 22

Agricultural Education Professionals' Overall Perceptions Regarding the Current Outcome of SBAE curriculum (n = 533)

	<i>M</i>	<i>SD</i>	Range
Teach leadership skills	4.18	.80	1.00-5.00
Teach agricultural literacy	4.04	.84	1.00-5.00
Develop interpersonal communication skills	4.03	.84	1.00-5.00
Teach occupational skills	4.00	.81	1.00-5.00
Develop life skills	4.00	.90	1.00-5.00
Teach personal development	4.00	.90	1.00-5.00
Teach traditional production agriculture	3.98	.91	1.00-5.00
Teach non-traditional agriculture	3.91	.90	1.00-5.00
Integrate academic skills in the context of agriculture	3.85	.90	1.00-5.00
Prepare students for college/university	3.80	.84	1.00-5.00
Cultivate student entrepreneurship	3.75	.93	1.00-5.00
Encourage wise management of the environment	3.75	.92	1.00-5.00
Provide industry certification/licensing	2.74	1.03	1.00-5.00
Prepare students for technical schools	3.72	.88	1.00-5.00
Prepare students for careers in agriculture	3.72	.98	1.00-5.00
Develop higher-order thinking skills	3.71	.99	1.00-5.00
Increase awareness of global agriculture	3.46	1.05	1.00-5.00

Note. Scale: 1=definitely disagree, 2=disagree, 3=uncertain, 4=agree, 5=definitely agree.

As a subgroup (see Table 23), SBAE teachers agreed with the current outcomes of SBAE curriculum “teaching leadership skills” ($M = 4.20$, $SD = 0.85$), “teaching

agricultural literacy” ($M = 4.14, SD = 0.84$), “developing interpersonal communication skills” ($M = 4.09, SD = 0.91$), “developing life skills” ($M = 4.07, SD = 0.91$), “teaching personal development” ($M = 4.04, SD = 0.96$), “integrating academic skills in the context of agriculture” ($M = 4.03, SD = 0.86$), and “teaching occupation skills” ($M = 4.02, SD = 0.85$). This subgroup disagreed that an outcome of SBAE curriculum is “providing industry certification/licensing” ($M = 2.82, SD = 1.04$).

Table 23

SBAE Teachers' Perceptions Regarding the Current Outcome of the SBAE Instructional Component (n = 310)

	<i>M</i>	<i>SD</i>	Range
Teach leadership skills	4.20	.85	2.00-5.00
Teach agricultural literacy	4.14	.84	1.00-5.00
Develop interpersonal communication skills	4.09	.91	1.00-5.00
Develop life skills	4.07	.94	1.00-5.00
Teach personal development	4.04	.96	1.00-5.00
Integrate academic skills in the context of agriculture	4.03	.86	2.00-5.00
Teach occupational skills	4.02	.85	1.00-5.00
Teach non-traditional agriculture	3.95	.92	1.00-5.00
Encourage wise management of the environment	3.93	.86	1.00-5.00
Develop higher-order thinking skills	3.90	.98	1.00-5.00
Teach traditional production agriculture	3.89	.97	1.00-5.00
Prepare students for college/university	3.86	.86	1.00-5.00
Prepare students for careers in agriculture	3.80	.99	1.00-5.00
Prepare students for technical schools	3.78	.90	1.00-5.00
Cultivate student entrepreneurship	3.77	.94	1.00-5.00
Increase awareness of global agriculture	3.71	1.00	1.00-5.00
Provide industry certification/licensing	2.82	1.04	1.00-5.00

Note. Scale: 1=definitely disagree, 2=disagree, 3=uncertain, 4=agree, 5=definitely agree.

Teacher educators (see Table 24) were uncertain regarding 15 of the 17 current outcomes of SBAE curriculum. They agreed that the current outcome of SBAE

curriculum was “teaching traditional production agriculture” ($M = 4.17, SD = 0.74$) and “teaching leadership skills” ($M = 4.06, SD, 0.78$). Teacher educators disagreed that SBAE curriculum was “increasing awareness of global agriculture” ($M = 2.85, SD = 1.00$).

Table 24

Teacher Educators' Perceptions Regarding the Current Outcome of SBAE curriculum (n = 127)

	<i>M</i>	<i>SD</i>	Range
Teach traditional production agriculture	4.17	.74	2.00-5.00
Teach leadership skills	4.06	.78	1.00-5.00
Increase awareness of global agriculture	2.85	1.00	1.00-5.00
Teach occupational skills	3.82	.77	2.00-5.00
Develop interpersonal communication skills	3.80	.77	1.00-5.00
Teach personal development	3.80	.85	2.00-5.00
Develop life skills	3.75	.84	2.00-5.00
Teach agricultural literacy	3.75	.85	1.00-5.00
Cultivate student entrepreneurship	3.70	.90	1.00-5.00
Teach non-traditional agriculture	3.67	.87	1.00-5.00
Prepare students for college/university	3.48	.85	2.00-5.00
Prepare students for technical schools	3.51	.87	1.00-5.00
Prepare students for careers in agriculture	3.39	1.02	1.00-5.00
Integrate academic skills in the context of agriculture	3.35	.95	1.00-5.00
Encourage wise management of the environment	3.24	.99	1.00-5.00
Develop higher-order thinking skills	3.15	.95	1.00-5.00
Provide industry certification/licensing	2.49	.97	1.00-5.00

Note. Scale: 1=definitely disagree, 2=disagree, 3=uncertain, 4=agree, 5=definitely agree.

Finally, state agricultural education program leaders agreed with 9 of the 17 current outcomes of SBAE curriculum (see Table 25). These state agricultural education program leaders were uncertain with the current outcomes of “preparing students for careers in agriculture” ($M = 3.90, SD = 3.83$), “encouraging wise management of the environment” ($M = 3.84, SD = 0.74$), “developing higher-order thinking skills” ($M = 3.83, SD = 0.83$), “preparing students for technical schools” ($M = 3.79, SD = 0.81$), “cultivating student entrepreneurship” ($M = 3.78, SD = 0.93$), and “increasing awareness of global agriculture” ($M = 3.49, SD = 0.96$). The state agricultural education program leaders disagreed with the current outcome of “providing industry certification/licensing” ($M = 2.84, SD = 1.04$).

Table 25

State Agricultural Education Leaders' Perceptions Regarding the Current Outcome of SBAE curriculum (n = 94)

	<i>M</i>	<i>SD</i>	Range
Teach leadership skills	4.31	.62	2.00-5.00
Teach personal development	4.16	.73	1.00-5.00
Develop interpersonal communication skills	4.16	.60	2.00-5.00
Teach agricultural literacy	4.14	.71	2.00-5.00
Teach occupational skills	4.12	.68	2.00-5.00
Develop life skills	4.11	.75	2.00-5.00
Teach non-traditional agriculture	4.10	.77	2.00-5.00
Prepare students for college/university	4.02	.63	2.00-5.00
Teach traditional production agriculture	4.02	.91	2.00-5.00
Prepare students for careers in agriculture	3.90	.77	2.00-5.00
Integrate academic skills in the context of agriculture	3.93	.73	2.00-5.00
Encourage wise management of the environment	3.84	.74	2.00-5.00
Develop higher-order thinking skills	3.83	.83	2.00-5.00
Prepare students for technical schools	3.79	.81	2.00-5.00
Cultivate student entrepreneurship	3.78	.93	1.00-5.00
Increase awareness of global agriculture	3.49	.96	2.00-5.00
Provide industry certification/licensing	2.84	1.04	1.00-5.00

Note. Scale: 1=definitely disagree, 2=disagree, 3=uncertain, 4=agree, 5=definitely agree.

Objective Four

Objective four sought to describe discrepancies between perceptions of agricultural education professionals regarding the purpose and current outcome of SBAE curriculum. Table 26 shows the mean weighted discrepancy scores (MWDS) for agricultural education professionals. “Increase awareness of global agriculture” (MWDS = 4.39) and “develop higher-order thinking skills” (MWDS = 4.38) ranked as the highest MWDS, thus, making them the highest priority. “Integrating academic skills in the context of agriculture” (MWDS = 3.27), “developing life skills” (MWDS = 3.10), “encourage wise management of the environment” (MWDS = 3.09), and “prepare students for careers in agriculture” (MWDS = 3.01), ranked as high priority areas. “Develop interpersonal communication skills” (MWDS = 2.88), “teach personal development” (MWDS = 2.84), “teach agricultural literacy” (MWDS = 2.68), “teach non-traditional agriculture” (MWDS = 2.61), “teach leadership skills” (2.34), and “prepare students for college/university” (MWDS = 2.15), were low priorities. Finally, “cultivate student entrepreneurship” (MWDS = 1.83), “teach occupational skills” (MWDS = 1.72), “provide industry certification/licensing” (MWDS = 1.23), “preparing students for technical schools (MWDS = 0.91), and “teach traditional production agriculture” (MWDS = -.055) ranked as the lowest priorities.

Table 26

Mean Weighted Discrepancy Score Rankings of Agricultural Education Professionals (n = 533)

Priority		Rank	MWDS*
Very High	Increase awareness of global agriculture	1	4.39
	Develop higher-order thinking skills	2	4.38
High	Integrate academic skills in the context of agriculture	3	3.27
	Develop life skills	4	3.10
	Encourage wise mgt. of the environment	5	3.09
	Prepare students for careers in agriculture	6	3.01
Low	Develop interpersonal communication skills	7	2.88
	Teach personal development	8	2.84
	Teach agricultural literacy	9	2.68
	Teach non-traditional agriculture	10	2.61
	Teach leadership skills	11	2.34
	Prepare students for college/university	12	2.15
Very Low	Cultivate student entrepreneurship	13	1.83
	Teach occupational skills	14	1.72
	Provide industry certification/licensing	15	1.23
	Prepare students for technical schools	16	0.91
	Teach traditional production agriculture	17	-0.55

Note. Scale: 1 – 1.5 = definitely disagree, 1.6 – 2.5 = disagree, 2.6 – 3.5 = uncertain, 3.5 – 4.5 = agree, 4.5 – 5.0 = definitely agree.

Table 27 shows the mean weighted discrepancy scores and overall ranking of competencies as reported by each of the three subgroups. “Increase awareness of global agriculture” ranked first with SBAE teachers (MWDS = 3.39) and state agricultural education program leaders (MWDS=4.66) and second with teacher educators (MWDS = 4.20). “Develop higher-order thinking skills” ranked first with teacher educators (MWDS = 4.40) and second with SBAE teachers (MWDS = 3.38) and state agricultural education program leaders (MWDS = 4.24). Both of these purposes were identified as being high priority areas. All three subgroups ranked “prepare students for technical schools” in the sixteenth position with a MWDS of 0.80 for SBAE teachers, -0.50 for teacher educators and 1.28 for state program leaders. “Teach traditional production agriculture” ranked last in all three groups with a MWDS of -0.05 for SBAE teachers, -2.74 for teacher educators and -0.64 for state agricultural education program leaders.

Table 27

Mean Weighted Discrepancy Scores of Agricultural Education Professional Subgroups (n=533)

Priority	Purpose/Outcome	SBAE Teachers (n = 310)		Teacher Educators (n = 127)	
		Rank	MWDS	Rank	MWDS
Very High	Increase awareness of global agriculture	1	3.39	2	4.20
	Develop higher-order thinking skills	2	3.38	1	4.40
	Develop life skills	3*	2.73	8**	1.59
	Prepare students for careers in agriculture	4*	2.65	5*	2.07
	Teach personal development	5*	2.63	10**	1.12
	Develop interpersonal communication skills	6*	2.57	6**	1.62
	Encourage wise mgt. of the environment	7*	2.42	4*	2.80
	Teach non-traditional agriculture	8*	2.43	11**	1.36
	Teach leadership skills	9*	2.36	13**	0.19
	Teach agricultural literacy	10*	2.35	7**	1.60
	Integrate academic skills in the context of agriculture	11*	2.23	3*	3.10
	Prepare students for college/university	12**	1.87	9**	1.46
	Teach occupational skills	13**	1.81	15**	-0.15
	Cultivate student entrepreneurship	14**	1.52	12**	0.24
	Provide industry certification/licensing	15**	1.09	14**	-0.13

Very	Prepare students for technical schools	16	0.80	16	-0.50
Low	Teach traditional production agriculture	17	-0.05	17	-2.74

Note. Scale: 1 – 1.5 = definitely disagree, 1.6 – 2.5 = disagree, 2.6 – 3.5 = uncertain, 3.5 – 4.5 = agree, 4.5 – 5.0 = definitely agree.

* = High Priority; ** = Low Priority

Table 27 continued

Mean Weighted Discrepancy Scores of Agricultural Education Professional Subgroups (n=533)

Priority	Purpose/Outcome	State Leaders (n = 96)	
		Rank	MWDS
<i>Very High</i>	Increase awareness of global agriculture	1	4.66
	Develop higher-order thinking skills	2	4.24
	Develop life skills	4*	3.13
	Prepare students for careers in agriculture	9*	2.56
	Teach personal development	5*	2.71
	Develop interpersonal communication skills	10*	2.55
	Encourage wise mgt. of the environment	8*	2.64
	Teach non-traditional agriculture	13**	2.04
	Teach leadership skills	11*	2.41
	Teach agricultural literacy	12*	2.10
	Integrate academic skills in the context of agriculture	3*	3.57
	Prepare students for college/university	15**	1.31
	Teach occupational skills	14**	1.76

	Cultivate student entrepreneurship	7*	2.65
	Provide industry certification/licensing	6*	2.69
Very	Prepare students for technical schools	16	1.28
Low	Teach traditional production agriculture	17	-0.64

Note. Scale: 1 – 1.5 = definitely disagree, 1.6 – 2.5 = disagree, 2.6 – 3.5 = uncertain, 3.5 – 4.5 = agree, 4.5 – 5.0 = definitely agree.

* = High Priority; ** = Low Priority

To further describe the purpose of SBAE curriculum, a factor analysis was conducted with the 17 purposes. From this factor analysis, five factors were created and MWDS were calculated to determine the overall rankings. Table 28 shows the MWDS and rankings for the five factors. “Personal Development” was considered a very high priority with a MWDS of 4.38. “Ag as Applied Science” (MWDS = 3.24) and “Agricultural Awareness” (MWDS = 3.04) were considered high priorities. “Post-Secondary Preparation” was a low priority with a MWDS of 2.13 and “Teaching Vocational Skills” was a very low priority with a MWDS of 1.43.

Table 28

Mean Weighted Discrepancy Score of Agricultural Education Professionals Regarding the Five Factors (n = 533)

Priority		Rank	MWDS*
Very High	Personal Development	1	4.38
High	Ag as Applied Science	2	3.24
	Agricultural Awareness	3	3.04
Low	Post-Secondary Preparation	4	2.13
Very Low	Teaching Vocational Skills	5	1.43

Note. Scale: 1 – 1.5 = definitely disagree, 1.6 – 2.5 = disagree, 2.6 – 3.5 = uncertain, 3.5 – 4.5 = agree, 4.5 – 5.0 = definitely agree.

Table 29 shows the MWDS of agricultural education professional subgroups regarding the five factors that resulted from the factor analysis. SBAE teachers (MWDS = 4.59) and state agricultural education program leaders (MWDS = 4.46) reported that “Personal Development” was the highest priority in the SBAE curriculum component, while teacher educators reported that “Ag as Applied Science” (MWDS = 4.01) was the highest priority. SBAE teachers (MWDS = 3.86) and state agricultural education program leaders (MWDS = 3.28) rated “Ag as Applied Science” as their second priority. Teachers educators reported that “Personal Development” (MWDS = 3.99) was the second priority among the five factors. All three subgroups placed “Agricultural Awareness” the third priority; however, it was still a high priority. “Post-Secondary Preparation” was the fourth priority for all three subgroups and MWDS placed it as a low priority. Finally, all three subgroups placed “Teaching Vocational Skills” as their lowest purpose in the SBAE curriculum component and it received a very low priority.

Table 29

Mean Weighted Discrepancy Scores of Agricultural Education Professional Subgroups Regarding Five Factors (n=533)

Priority	Purpose/Outcome	SBAE Teachers (n = 310)		Teacher Educators (n = 127)	
		Rank	MWDS	Rank	MWDS
Very High	Personal Development	1	4.59	2	3.99
High	Ag as Applied Science	2	3.86	1	4.01
	Agricultural Awareness	3	3.01	3	3.10
Low	Post-Secondary Preparation	4	2.38	4	1.38
Very Low	Teaching Vocational Skills	5	1.23	5	-0.98

Note. Scale: 1 – 1.5 = definitely disagree, 1.6 – 2.5 = disagree, 2.6 – 3.5 = uncertain, 3.5 – 4.5 = agree, 4.5 – 5.0 = definitely agree.

Table 29 *continued*

Mean Weighted Discrepancy Scores of Agricultural Education Professional Subgroups Regarding Five Factors (n=533)

Priority	Purpose/Outcome	State Leaders (n = 96)	
		Rank	MWDS
Very High	Personal Development	1	4.46
High	Ag as Applied Science	2	3.28
	Agricultural Awareness	3	2.58
Low	Post-Secondary Preparation	4	1.86
Very Low	Teaching Vocational Skills	5	1.84

Note. Scale: 1 – 1.5 = definitely disagree, 1.6 – 2.5 = disagree, 2.6 – 3.5 = uncertain, 3.5 – 4.5 = agree, 4.5 – 5.0 = definitely agree.

Objective Five

Table 20 shows the descriptive statistics of role within agricultural education and regional locale on the five dependent variables that resulted from the factor analysis. Teacher educators had the highest mean in Region I ($M = 4.63$) and Region III ($M = 4.48$) regarding the purpose of “personal development” in SBAE curriculum. They reported the lowest mean scores in Region II ($M = 4.44$), Region IV ($M = 4.48$) and Region VI ($M = 4.51$). State agricultural education program leaders had the highest mean score in Region II ($M = 4.79$), Region IV ($M = 4.76$), Region V ($M = 4.68$) and Region VI ($M = 4.78$). This group also reported the lowest mean score in Region III ($M = 4.44$). SBAE teachers reported the lowest mean score in Region I ($M = 4.58$) and Region V (4.42).

When reporting their perceptions regarding the purpose of SBAE curriculum to “teach vocational skills,” SBAE teachers reported the largest mean in Region I ($M = 4.36$) and Region VI ($M = 4.22$). Region IV of this group reported the lowest mean (4.14). Teacher educators reported the highest mean in Region III ($M = 4.19$); however, they had the lowest mean score in Region I ($M = 2.27$), Region II ($M = 3.94$), Region V ($M = 4.20$) and Region VI ($M = 4.10$). State agricultural education program leaders were the highest mean in Region II ($M = 4.39$), Region IV ($M = 4.41$) and Region V ($M = 4.38$). This group also had the lowest mean in Region III ($M = 4.00$).

State agricultural education leaders reported the largest mean score in five of the six regions regarding the purpose “post-secondary preparation.” In region I their mean was 4.19, Region II mean was 4.22, Region III mean was 3.60, Region IV mean was 3.98 mean, and Region V mean was 4.27. SBAE teachers reported the largest mean ($M =$

4.05) in Region VI. Teacher educators were the lowest mean score in all six regions with mean scores of 3.46 in Region I, 3.30 in Region II, 3.13 in Region III, 3.45 in Region IV, 3.55 in Region V and 3.77 Region VI.

When reporting on the purpose of “agriculture as applied science” SBAE teachers reported the highest mean ($M = 4.25$) in Region III while reporting the lowest means in Region I ($M = 4.14$), Region V ($M = 3.92$) and Region VI ($M = 4.06$). Teacher educators reported the highest mean in Region I ($M = 4.44$) and Region VI ($M = 4.20$). Teacher educators reported the lowest mean in Region II ($M = 4.00$) and Region IV ($M = 4.13$). State agricultural education program leaders reported the highest mean in Region II ($M = 4.42$), Region IV ($M = 4.31$) and Region V ($M = 4.23$). This group also reported the lowest mean in Region III ($M = 4.10$).

SBAE teachers in region IV rated “agricultural awareness” highest ($M = 4.57$); while SBAE teachers in Region V ($M = 4.39$) and Region VI ($M = 4.59$) had the lowest mean scores. Teacher educators in Region I ($M = 4.54$), Region III ($M = 4.53$) and Region VI ($M = 4.64$) rated the highest mean while they reported the lowest mean in Region II ($M = 4.39$). State agricultural education program leaders rated the highest mean in Region II ($M = 4.73$) and Region V ($M = 4.44$) and the lowest mean in Region I ($M = 4.46$), Region III ($M = 4.40$) and Region IV ($M = 4.45$).

Table 30

Descriptive Statistics of Role Within Agricultural Education Profession and Regional Locality of Agricultural Education Professionals (n = 533)

	<u>Region I</u>		<u>Region II</u>		<u>Region III</u>		<u>Region IV</u>		<u>Region V</u>		<u>Region VI</u>		<u>Overall</u>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
<u>Personal Development</u>														
SBAE Teachers	4.58	0.39	4.70	0.37	4.46	0.40	4.59	0.41	4.42	0.47	4.74	0.52	4.60	0.43
Teacher Educators	4.63	0.41	4.44	0.55	4.48	0.48	4.48	0.36	4.50	0.31	4.51	0.42	4.50	0.43
State Leaders	4.60	0.38	4.79	0.25	4.44	0.26	4.76	0.25	4.68	0.47	4.78	0.25	4.71	0.32
<u>Vocational Prep</u>														
SBAE Teachers	4.36	0.44	4.26	0.55	4.10	0.30	4.14	0.51	4.16	0.47	4.22	0.66	4.20	0.52
Teacher Educators	4.27	0.55	3.94	0.64	4.19	0.44	4.22	0.52	4.20	0.42	4.10	0.56	4.15	0.54
State Leaders	4.31	0.61	4.39	0.27	4.00	0.47	4.41	0.38	4.38	0.46	4.20	0.61	4.32	0.48
<u>Post Secondary Prep</u>														
SBAE Teachers	3.71	0.61	3.88	0.83	3.46	0.59	3.66	0.69	3.86	0.63	4.05	0.95	3.46	0.71
Teacher Educators	3.46	0.71	3.30	1.06	3.13	0.52	3.45	0.87	3.55	0.86	3.77	0.80	3.45	0.87
State Leaders	4.19	0.66	4.22	0.55	3.60	0.65	3.98	0.66	4.27	0.42	3.95	0.54	4.08	0.59

Table 30 (continued)

Descriptive Statistics of Role Within Agricultural Education Profession and Regional Locality of Agricultural Education Professionals (n = 533)

	<u>Region I</u>		<u>Region II</u>		<u>Region III</u>		<u>Region IV</u>		<u>Region V</u>		<u>Region VI</u>		<u>Overall</u>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
<u>Ag as Applied Science</u>														
SBAE Teachers	4.14	0.61	4.34	0.51	4.25	0.35	4.27	0.50	3.92	0.49	4.06	0.73	4.20	0.56
Teacher Educators	4.44	0.50	4.00	0.71	4.13	0.35	4.13	0.50	4.02	0.48	4.20	0.39	4.15	0.55
State Leaders	4.28	0.48	4.42	0.35	4.10	0.42	4.31	0.33	4.23	0.62	4.17	0.51	4.27	0.46
<u>Agricultural Awareness</u>														
SBAE Teachers	4.49	0.36	4.52	0.45	4.49	0.38	4.57	0.38	4.39	0.40	4.59	0.64	4.52	0.45
Teacher Educators	4.54	0.46	4.39	0.42	4.53	0.30	4.46	0.42	4.41	0.41	4.64	0.41	4.48	0.42
State Leaders	4.46	0.38	4.73	0.24	4.40	0.35	4.45	0.55	4.44	0.44	4.61	0.42	4.56	0.42

Note. Scale: 1=definitely disagree, 2=disagree, 3=uncertain, 4=agree, 5=definitely agree.

Table 31 shows the MANCOVA results regarding role of agricultural education professionals within agricultural education and regional locale on the purpose of personal development. The mode significance of ($p = 0.01$) indicates that role within agricultural education and locale combined are significant to the perceptions of agricultural education professionals regarding purpose of personal development. Independently, both role in agricultural education ($p = 0.01$) and regional locality ($p = 0.01$) are significant to this purpose.

Table 31

MANCOVA of Perceptions Regarding the Purpose of Personal Development (n = 533)

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Model	11	1026.83	6123.12	0.01*
Role in Agricultural Education	2	0.88	5.26	0.01*
Regional Locality	5	0.60	3.59	0.01*

*Note: *Significant at $p \leq 0.05$*

SBAE teachers had the highest Mean at 4.61 ($SD = 0.41$) followed by agricultural education professionals ($M = 4.58, SD = 0.39$) and teacher educators ($M = 4.24, SD = 0.55$) (see Table 32). Region VI agricultural education professionals reported the largest Mean at 4.68 ($SD = 0.40$) regarding “Personal Development” followed Region II ($M = 4.64, SD = 0.39$), Region IV ($M = 4.61, SD = 0.37$), Region V ($M = 4.53, SD = 0.42$) and Region III ($M = 4.46, SD = 0.38$).

Table 32

Descriptive Statistics for Role in Agricultural Education and Regional Locale Regarding the Factor Personal Development (n=533)

	<i>M</i>	<i>SD</i>
<u>Role within Agricultural Education</u>		
SBAE Teachers	4.61	0.41
Teacher Educators	4.24	0.55
Agricultural Education Professionals	4.58	0.39
<u>Regional Local</u>		
Region I	4.60	0.39
Region II	4.64	0.39
Region III	4.46	0.38
Region IV	4.61	0.34
Region V	4.53	0.42
Region VI	4.68	0.40

Table 33 shows the MANCOVA results for the perceptions regarding the purpose of teaching vocational skills. As a Model, role within agricultural education and regional locale were significant ($p = 0.01$); however, independently only role in agricultural education was significant ($p = 0.04$).

Table 33

MANCOVA of Perceptions Regarding the Purpose of Teaching Vocational Skills (n = 533)

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P</i>
Model	11	859.56	3171.52	0.01*
Role in Agricultural Education	2	0.91	3.35	0.04*
Regional Locality	5	0.28	1.04	0.40

Note: *Significant at $p \leq 0.05$

SBAE teachers had the highest mean ($M = 4.44$, $SD = 0.43$) when reporting on the purpose of SBAE curriculum to teach vocational skills (see Table 34). Agricultural education professionals had the second highest mean ($M = 4.26$, $SD = 0.56$) while teacher educators had the lowest mean at 4.12 ($SD = 0.69$). Agricultural education professionals in Region I ($M = 4.31$, $SD = 0.40$), Region IV ($M = 4.26$, $SD = 0.47$), and Region V ($M = 4.25$, $SD = 0.45$) reported the highest means. Region II agricultural education professionals reported a mean of 4.20 ($SD = 0.49$), Region VI reported a mean of 4.17 ($SD = 0.61$) and the lowest mean was reported by agricultural education professionals in Region III ($M = 4.10$, $SD = 0.40$).

Table 34

Descriptive Statistics for Role in Agricultural Education and Regional Locale Regarding the Factor Teaching Vocational Skills (n=533)

	<i>M</i>	<i>SD</i>
<u>Role within Agricultural Education</u>		
SBAE Teachers	4.44	0.43
Teacher Educators	4.12	0.69
Agricultural Education Professionals	4.26	0.56
<u>Regional Local</u>		
Region I	4.31	0.40
Region II	4.20	0.49
Region III	4.10	0.40
Region IV	4.26	0.47
Region V	4.25	0.45
Region VI	4.17	0.61

Table 35 shows the MANCOVA results for role within agricultural education and regional locale regarding post-secondary preparation. The *Model* of role within agricultural education and regional locale is significant ($p = 0.01$) as are the independent perceptions of role within agricultural education ($p = 0.01$) and regional locale ($p = 0.01$).

Table 35

MANCOVA of Perceptions Regarding the Purpose of Post Secondary Preparation (n = 533)

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Model	11	689.77	1213.27	0.01*
Role in Agricultural Education	2	5.97	10.50	0.01*
Regional Locality	5	1.82	3.20	0.01*

*Note: *Significant at $p \leq 0.05$*

Agricultural education professionals had the highest mean at 4.01 ($SD = 0.52$), SBAE teachers reported a mean of 3.89 ($SD = 0.87$), and teacher educators reported the lowest mean at 3.72 ($SD = 0.76$) (see Table 36). Agricultural education professionals in region VI reported the highest mean at 3.92 ($SD = 0.76$). These professionals in Region V reported the second highest mean ($M = 3.89$, $SD = 0.64$) followed by Region II ($M = 3.80$, $SD = 0.81$) and Region IV ($M = 3.69$, $SD = 0.74$). The lowest means were reported by agricultural education professionals in Region I ($M = 3.48$, $SD = 0.66$) and Region III ($M = 0.59$).

Table 36

Descriptive Statistics for Role in Agricultural Education and Regional Locale Regarding the Factor Post Secondary Preparation (n=533)

	<i>M</i>	<i>SD</i>
<u>Role within Agricultural Education</u>		
SBAE Teachers	3.89	0.87
Teacher Educators	3.72	0.76
Agricultural Education Professionals	4.01	0.52
<u>Regional Local</u>		
Region I	4.45	0.66
Region II	3.80	0.81
Region III	4.40	0.59
Region IV	3.69	0.74
Region V	3.89	0.64
Region VI	3.92	0.76

Table 37 shows that the *MANCOVA* for perceptions of role within agricultural education and locale regarding the purpose of agriculture as an applied science is significant ($p = 0.01$) as is regional locale ($p = 0.01$).

Table 37

*MANCOVA of Perceptions Regarding the Purpose of Agriculture as an Applied Science
(n = 533)*

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P</i>
Model	11	854.14	3014.32	0.01*
Role in Agricultural Education	2	0.61	2.16	0.12
Regional Locality	5	1.16	4.08	0.01*

Note: *Significant at $p \leq 0.05$

SBAE teachers reported the highest mean at 4.25 ($SD = 0.36$) followed by teacher educators ($M = 4.18$, $SD = 0.44$) and agricultural education professionals ($M = 4.16$, $SD = 0.44$) (see Table 38). Agricultural education professionals in Region I reported the highest mean at 4.29 ($SD = 0.53$) followed by Region II ($M = 4.25$, $SD = 0.52$) and Region IV ($M = 4.24$, $SD = 0.24$). Region III agricultural education professionals reported a mean of 4.16 ($SD = 0.37$) and Region VI reported a mean of 4.14 ($SD = 0.54$). The lowest mean was reported by Region V ($M = 4.06$, $SD = 0.53$).

Table 38

Descriptive Statistics for Role in Agricultural Education and Regional Locale Regarding the Factor Agriculture as an Applied Science (n=533)

	<i>M</i>	<i>SD</i>
<u>Role within Agricultural Education</u>		
SBAE Teachers	4.25	0.36
Teacher Educators	4.18	0.48
Agricultural Education Professionals	4.16	0.44
<u>Regional Local</u>		
Region I	4.29	0.53
Region II	4.25	0.52
Region III	4.16	0.37
Region IV	4.24	0.44
Region V	4.06	0.53
Region VI	4.14	0.54

The final MANCOVA considered the role within agricultural education and regional locale of agricultural educational professionals regarding the purpose of SBAE curriculum to be “agricultural awareness” (see Table 39). As a model, role within agricultural education and regional locale was significant ($p = 0.01$); however, only role in agricultural education ($p = 0.05$) was independently significant in this purpose area.

Table 39

MANCOVA of Perceptions Regarding the Purpose of Agricultural Awareness (n = 533)

Source	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P</i>
Model	11	988.24	5272.29	0.01*
Role in Agricultural Education	2	0.58	3.10	0.05*
Regional Locality	5	0.36	1.92	0.09

Note: *Significant at $p \leq 0.05$

Teacher educators reported the highest mean ($M = 4.57$, $SD = 0.41$) regarding agricultural awareness as the purpose of SBAE curriculum (see Table 40). SBAE teachers reported the second highest mean ($M = 4.49$, $SD = 0.34$) and agricultural education professionals reported the lowest mean at 4.44 ($SD = 0.53$). Agricultural education professionals in Region VI reported the highest mean at 4.61 ($SD = 0.40$) followed by Region II ($M = 4.55$, $SD = 0.37$) and Region I ($M = 4.50$, $SD = 0.40$). Agricultural education professionals in Region IV reported a mean of 4.49 ($SD = 0.45$), while those in Region III reported a mean of 4.47 ($SD = 0.34$). The lowest mean was reported by professionals in Region V ($M = 4.41$, $SD = 0.42$).

Table 40

Descriptive Statistics for Role in Agricultural Education and Regional Locale Regarding the Factor Agricultural Awareness (n=533)

	<i>M</i>	<i>SD</i>
<u>Role within Agricultural Education</u>		
SBAE Teachers	4.49	0.34
Teacher Educators	4.57	0.41
Agricultural Education Professionals	4.44	0.53
<u>Regional Local</u>		
Region I	4.50	0.40
Region II	4.55	0.37
Region III	4.47	0.34
Region IV	4.49	0.45
Region V	4.41	0.42
Region VI	4.61	0.49

Table 41 shows the MANCOVA Hotelling's Trace (T2) test of main effects regarding role within agricultural education and regional locale as they contribute to the difference in each dependent variable. Role within agricultural education is significant ($F = 2.58, p = 0.01$) as is regional locality ($F = 2.99, p = 0.01$).

Table 41

MANCOVA Hotelling's Trace (T^2) Statistic Regarding the Effects of Role and Locality (n = 533)

Effect	F	<i>p</i>
Role within agricultural education	2.58	0.01*
Regional Locality	2.99	0.01*

*Significant at $p \leq 0.05$

CHAPTER V

SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Purpose of the Study

The purpose of this study was to identify if a discrepancy exists between various agricultural education professionals' perceptions regarding the purpose and current outcome of school-based agricultural education (SBAE) curriculum.

Research Objectives

The following research objectives were used to guide this study:

1. Describe agricultural education professionals by role in agricultural education, sex, age, years of experience in agricultural education, regional locality and highest educational degree attained.
2. Describe the perceptions of agricultural education professionals regarding the purpose of SBAE curriculum.
3. Describe the perceptions of agricultural education professionals regarding the current outcome of SBAE curriculum.
4. Describe discrepancies between perceptions of agricultural education professionals regarding the purpose and current outcome of SBAE curriculum.
5. Describe differences that occur in perceptions of agricultural education professionals regarding purpose of SBAE curriculum among different roles within agricultural education and regional locale.

Limitations of the Study

The study used three different groups of agricultural education professionals: SBAE teachers, teacher educators and state agricultural education program leaders. Each participant in this study was randomly chosen from within his/her subgroup using names provided by the National FFA Organization. All frames were scrutinized for errors and duplicates; however, the researcher had no formal means for verifying accuracy. Also, data was collected during the 2008-2009 school year. Participants may have responded differently to items on the instrument based on previous experience with SBAE curriculum.

Research Design

This study was descriptive in nature and sought to describe perceptions of agricultural education professionals regarding the purpose and current outcome of SBAE curriculum. This type of research “uses questionnaires and interviews to gather information from groups or subjects” (Ary, Jacobs, Razavieh and Sorensen, 2006, p. 31). Multivariate analysis of covariates (MANCOVA) was used to examine potential relationships between agricultural education professionals and their perceptions regarding the purpose of SBAE curriculum. In particular, this study sought to determine if relationships between role within the agricultural education profession and regional locale could be used to explain the perceptions regarding the purpose of SBAE curriculum. Investigating these two demographics allowed the study to determine if either of these two variables, or a combination of the two, explained variances in perceptions regarding the purpose of SBAE curriculum. Descriptive research of this type has no

manipulation of variables; therefore, it can have no attempt to establish causality (Ross, 1999).

This study had one dependent variable: the perception regarding the purpose of SBAE curriculum. The independent variables for the study included role within the agricultural education profession and regional locale of the participants.

Population

The target population for this national study was agricultural education professionals ($N = 13,049$). The stratified sample used in this study included homogeneous subgroups of SBAE teachers at the secondary level ($n = 12,701$), teacher educators who concentrate on SBAE teacher development ($n = 218$), and state agricultural education program leaders who are engaged with continuing professional development efforts of SBAE teachers ($n = 130$). Because the subgroups of this study had different population sizes, a stratified sampling was used. Based on the recommendations of Dillman (2007), 610 samples were randomly selected for this study. Of these, 373 were SBAE teachers, 140 were teacher educators and 97 were state agricultural education program leaders. Because all participants were chosen randomly within each subgroup, this study was considered probabilistic; thus, findings can be inferred back to the target population.

Instrumentation

The *Purpose and Current Outcome of SBAE Curriculum Instrument* was developed and administered to the sample in an effort to gather quantitative information regarding the purpose and current outcome of SBAE curriculum. The *Purpose and*

Current Outcome of SBAE Curriculum Instrument was developed because email questionnaires have the advantage of quicker returns, lower non-response to individual items, cost effectiveness and timelines of responses (Dillman, 2000). Hosted Survey™ was used to create and distribute the online questionnaire because of its affordability, design options and customer service.

The *Purpose and Current Outcome of SBAE Curriculum Instrument* was developed after an extensive review of literature. The questionnaire was comprised of three sections. Section I assessed the perceptions of agricultural education professionals regarding the purpose of SBAE curriculum. A total of 18 items were included in this section. The first 17 items asked participants to use a five point Likert-type scale comprised of 1 = definitely disagree, 2 = disagree, 3 = uncertain, 4 = agree and 5 = definitely agree. The 18th item was an open-ended question asking respondents to list other purposes of SBAE curriculum that were not included in the previous thematic areas. Section II elicited perceptions of agricultural education professionals regarding the current outcome of SBAE curriculum. There were 18 items included in this section. The first 17 items asked participants to use a five point Likert-type scale comprised of 1 = definitely disagree, 2 = disagree, 3 = uncertain, 4 = agree and 5 = definitely agree. The 18th item was an open-ended question asking participants to list other perceptions as to the current outcome of SBAE curriculum. Section III solicited professional characteristics including role within agricultural education, age, sex, years of experience in agricultural education, regional locale, and highest degree attained. Sex and age were open-ended questions, while the remaining professional characteristics were forced choice items.

Validity and Reliability

Validity of the instrument was established by a panel of experts consisting of five teacher educators who were knowledgeable in developing instruments and who had extensive research experience within agricultural education. Each panel member was contacted via email on March 4, 2009 asking if he would be willing to serve on a panel of experts for this study. All five agreed to serve on the panel and on March 11, 2009 a hard-copy of *The Purpose and Current Outcome of SBAE Curriculum Instrument* was mailed along with a letter explaining the purpose of each panel member. On March 18, 2009 each member was contacted via email and given the hyperlink to the online version of the *Purpose and Current Outcome of SBAE Curriculum Instrument*. Suggestions and comments offered by the panel were incorporated into the final version of the instrument. Suggestions ranged from grammatical errors to clarification issues regarding the meaning of specific items.

A pilot test was used to determine the reliability of the *Purpose and Current Outcome of SBAE Curriculum Instrument*. The pilot group (N=40) consisted of purposefully selected individuals including SBAE teachers, state agricultural education program leaders and teacher educators that were not a part of the randomly selected sample. The panel consisted of five teacher educators who were knowledgeable in developing instruments and who had extensive research experience within agricultural education. A test-retest was used to establish reliability with this instrument (Trochim, 2006). The final completion rate for the test-retest was 34 respondents. Bivariate correlations were calculated to establish the reliability of each item within the instrument.

Individual items showed a bivariate correlation score ranging from 0.80 to 0.98. Each of the items was deemed reliable according to Nunnally (1978).

Data Collection

Using the internet for data collection has greatly impacted the field of survey research (Cook & Thompson, 2000; Dillman, 2000; Dillman & Bowker, 2000; Dillman, Torotra & Bowker, 1998; Schaffer & Dillman, 1998). Internet surveys have the advantage of quicker returns, lower non-response to individual items, and more detailed responses to open-ended questions (Dillman, 2000). This study used HostedSurvey™ to collect data from participants.

Then National FFA Organization provided names and physical addresses; however, no email could be provided as per their policy. Once the frame was selected, email addresses were located using AAAE, NAAE, NASAE, and state SBAE teacher directories, as well as state FFA, local school district and University web pages.

Based on the research of Dillman (2004), Mehta & Sivadas (1995), and Sheehan & Hoy (1999) participants were pre-notified using an email message to let them know that they had been randomly selected to participate in this study. Initial contact with the participants of this study occurred on April 20, 2009. The email message also emphasized the importance of their participation and notified them of the upcoming email that would contain the HostedSurvey™ hyperlink. The first invitation to participate in the study was emailed to all participants on April 27, 2009. This first email communication was personalized with specific salutation and provided the basic elements in the cover letter including a clear overview of the study's purpose, assurances of confidentiality and

privacy, a hyperlink to HostedSurvey™ and contact information of who to contact in case of questions (Cook, Heath & Thompson, 2000; Shannon, Johnson, Searcy & Alan, 2002). The email message also explained that participation in the study was voluntary and within the guidelines of IRB policies.

Non-response error can be addressed by getting back as many responses as possible (Miller & Smith, 1983). The response rate to the original email was 31% ($n = 189$) which according to Miller and Smith (1983) warranted concern. One week later, a second email message was sent to those who had not responded. This second email reiterated the importance of the study, referenced the hyper-link to HostedSurvey™ and encouraged participants to complete the instrument. The response rate after the second email message was 49% ($n = 299$). A third contact was made on May 12, 2009 that was similar to the second; however, it was more of a reminder to complete the instrument. The response rate after the third contact was 66% ($n = 405$). The final contact was made on May 19, 2009 and was similar to the third reminder. The final response rate for the study was 80% ($n = 488$). Dillman (2004) noted that most non-response was due to oversight rather than refusal.

To ensure that non-response error was not a threat to external validity, multiple efforts were made to contact participants and encourage them to participate in the study. All emails were personalized and included a hyperlink to the online instrument. Each of these steps was in accordance with recommendations set forth by Dillman (2004). Even though efforts were made to avoid non-response error, a proportional, stratified, random sampling of non-respondents ($n=45$) were called by telephone and encouraged to complete the questionnaire. The 45 non-respondents were randomly selected from each

subgroup in an effort to emulate respondent percentages. The non-response frame included 25 SBAE teachers, 12 teacher educators and 8 state agricultural education program leaders.

The professional characteristics from the 45 non-respondents were then compared to 45 randomly selected, proportional, stratified respondents. Further comparison between the two groups was done using Chi-Square for sex, major role in agricultural education and highest degree earned. Independent sample t-tests for age and years of experience in agricultural education were also calculated. No significant difference was shown in any of these demographic areas; therefore, it was concluded that no significant difference could be expected from respondents and non-respondents to items in sections I and II of the *Purpose and Current Outcome of SBAE Curriculum Instrument*.

Data Analysis

Data were analyzed using SPSS 16.0. The alpha level of 0.05 was established *a priori*. Cohens *d* (1988) descriptors were used to describe the magnitude of relationships reported.

Objective One

Objective one sought to describe agricultural education professionals by role within agricultural education, age, sex, years of experience in agricultural education, regional locale and highest degree attained. Descriptive statistics were reported on measures of central tendency and measures of variability. Sex, regional locale, role within agricultural education and highest educational degree attained were categorical in data so frequency counts and percentages were reported. Mean scores, standard

deviations and ranges were generated for the continuous data of age and years of experience in agricultural education.

Objective Two

The purpose of objective two was to describe the perceptions of agricultural education professionals regarding the purpose of SBAE curriculum. Mean scores, standard deviations and ranges were generated for responses of agricultural education professionals to all items found in section I of the *Purpose and Current Outcome of SBAE Curriculum Instrument*.

Objective Three

The purpose of objective three was to describe the perceptions of agricultural education professionals regarding the current outcome of SBAE curriculum. Mean scores, standard deviations and ranges were generated for responses of agricultural education professionals to all items found in section II of the *Purpose and Current Outcome of SBAE Curriculum Instrument*.

Objective Four

The purpose of objective four was to describe the discrepancy between perceptions of agricultural education professionals regarding the purpose and current outcome of SBAE curriculum. A mean weighted discrepancy score (MWDS) was calculated for each of the perceptions regarding purpose and current outcome of SBAE curriculum (Borich, 1980). To accomplish this, a discrepancy score for each purpose was calculated by taking the purpose score minus the current outcome score. A weighted discrepancy score was then calculated by multiplying the discrepancy score by the mean importance rating. Finally, a MWDS was calculated for each purpose by taking the sum

of the weighted discrepancy score and dividing by the number of observations for that competency. The 17 purposes were then ranked for the total group and for each of the individual subgroups.

Objective Five

Because of the large number of constructs being studied (N=17), a factor analysis was performed on the responses to Sections I and II of the questionnaire. Five factors were extracted. A Principal Component Analysis extraction method was used, as was a Varimax with Kaiser Normalization rotation component matrix. The rotation of factors is used to improve meaningfulness, reliability, and reproducibility of factors (Ford, MacCallum, & Tait, 1986). The five factors that resulted were named “Personal Development,” “Teaching Vocational Skills,” “Post-Secondary Preparation,” “Agricultural Awareness,” and “Agriculture as an Applied Science.” A multiple analysis of covariance (MANCOVA) was then used to explain the differences that existed in agricultural educational professionals’ perceptions regarding the purpose of SBAE curriculum among agricultural education professionals and their roles within agricultural education and regional locale.

Summary of the Findings

Objective One

Among the participants of this study, 58% (n = 310) were SBAE teachers, 24% were teacher educators and 18% reported to be state agricultural education program leaders. The mean age for SBEA teachers was 40.75 ($SD = 9.80$). Teacher educators had a mean age of 45.62 ($SD = 11.49$) and state agricultural education program leaders had a

mean age of 44.74 ($SD = 12.68$). The mean age for all participants ($n = 533$) was 42.63 with a standard deviation of 10.99.

SBAE teachers reported to have been working in agricultural education an average of 15.59 ($SD = 8.97$) years; teacher educators averaged 20.58 ($SD = 12.02$) years, and state agricultural education program leaders averaged 19.36 ($SD = 12.29$) years. The total participation group ($n = 533$) has taught, on average, 17.56 ($SD = 10.63$) years.

Of the 310 school-based agricultural education teachers that responded, 113 (37%) were female and 197 (63%) were male. Twenty-eight (22%) of the 127 teacher educators who responded were female and 99 (63%) were male. Of the 96 state agricultural education program leaders, that responded 25 (26%) were female while 71 (74%) were male. The total study ($n = 533$) indicated 166 (31%) female and 367 (69%) male.

Education attained by SBAE teachers included 1% ($n=1$) associate degrees, 47% ($n = 147$) bachelor's, 50% ($n = 155$) master's and 2% ($n = 6$) doctorate. Teacher educators included 1% ($n = 1$) bachelor's, 3% ($n = 4$) master's and 96% ($n = 122$) doctorate degrees. State agricultural education program leaders had 1% ($n = 1$) associate degree, 20% ($n = 20$) bachelor's, 66% ($n = 64$) master's, 11% ($n = 10$) doctorate and 2% ($n = 2$) "other." As a total group, participants reported 0.7% ($n = 4$) associate degrees, 31% ($n = 166$) bachelor's, 42% ($n = 223$) master's, 26% ($n = 138$) doctorate and 0.3% ($n = 2$) "other."

Thirteen percent of the participants ($n = 69$) were from Region I, which represents the Western states. Region II, found in the Southwest, had the largest percentage of

participants with 25% ($n = 135$). 8% ($n = 41$) were from Region III, the Midwest states and 23% ($n = 123$) were from Region IV which is comprised of the North central states. Region V is found in the Southern part of the U.S. and represented 15% ($n = 82$) of the participants while Region VI, the Eastern states, had 16% ($n = 83$) of the total participants. All fifty states had respondents in this study.

Objective Two

Mean scores on a 5-point Likert scale showed that agricultural education professionals, as a whole, agreed with 14 of the 17 purposes of SBAE curriculum: “teaching leadership skills” ($M = 4.29$, $SD = 0.52$) “developing life skills” ($M = 4.66$, $SD = 0.57$), “developing higher-order thinking skills” ($M = 4.65$, $SD = 0.52$), and “developing interpersonal communication skills” ($M = 4.65$, $SD = 0.53$) being their top choices for the purpose of SBAE curriculum. Participants were uncertain with “providing industry certification/licensing” ($M = 3.14$, $SD = 1.14$), “teaching traditional production agriculture” ($M = 3.83$, $SD = 0.89$), and “preparing students for technical schools” ($M = 3.95$, $SD = 0.89$).

SBAE teachers, as a subgroup, had similar results agreeing with the same 14 purposes. This same subgroup group reported “teaching leadership skills” ($M = 4.70$, $SD = 0.49$), “developing life skills” ($M = 4.65$, $SD = 0.58$), “developing interpersonal communication skills” ($M = 4.64$, $SD = 0.55$), and “teaching agricultural literacy” ($M = 4.64$, $SD = 0.59$) as their top purposes. They were also uncertain with “providing industry certification/licensing” ($M = 3.12$, $SD = 1.14$), “teaching traditional production agriculture” ($M = 3.87$, $SD = 0.89$), and “preparing students for technical schools” ($M = 3.98$, $SD = 0.98$).

Teacher educators, as a subgroup, agreed with 14 of the 17 purposes; however, they were uncertain with “teaching traditional production agriculture” ($M = 3.72, SD = 0.89$) and “preparing students for technical schools” ($M = 3.76, SD = 0.99$). They also disagreed with the purpose of “providing industry certification/licensing” ($M = 2.72, SD = 1.09$). This group also reported their largest mean scores in the purposes of “developing higher-order thinking skills” ($M = 4.65, SD = 0.58$), “developing interpersonal communication skills” ($M = 4.64, SD = 0.54$), and “developing life skills” ($M = 4.61, SD = 0.59$).

State agricultural education program leaders agreed with 15 of the 17 purposes. These individuals placed “teaching leadership skills” ($M = 4.81, SD = 0.42$) as their number one purpose followed by “developing life skills” ($M = 4.77, SD = 0.49$), “developing higher-order thinking skills” ($M = 4.73, SD = 0.45$), and “teaching personal development” ($M = 4.73, SD = 0.59$). They were also uncertain with “providing industry certification/licensing” ($M = 3.59, SD = 0.97$) and “teaching traditional production agriculture” ($M = 3.85, SD = 0.87$).

Objective Three

When reporting on the perceptions of agricultural education professionals regarding the current outcome of SBAE curriculum, agricultural education professionals agreed that SBAE was currently “teaching leadership skills” ($M = 4.18, SD = 0.80$), “teaching occupational skills” ($M = 4.00, SD = 0.81$), “teaching agricultural literacy” ($M = 4.04, SD = 0.84$), as well as “developing interpersonal communication skills” ($M = 4.03, SD = 0.84$), “developing life skills” ($M = 4.00, SD = 0.90$), and “teaching personal development” ($M = 4.00, SD = 0.90$). These agricultural education leaders were

uncertain if SBAE curriculum was currently meeting 10 of the 17 categories and they disagreed with the statement that a current outcome of SBAE curriculum is “providing industry certification/licensing” ($M = 2.74, SD = 1.03$).

As a subgroup, SBAE teachers agreed that the current outcome of SBAE curriculum at the secondary level is “teaching leadership skills” ($M = 4.20, SD = 0.85$), “teaching agricultural literacy” ($M = 4.14, SD = 0.84$), “developing interpersonal communication skills” ($M = 4.09, SD = 0.91$), “developing life skills” ($M = 4.07, SD = 0.91$), “teaching personal development” ($M = 4.04, SD = 0.96$), “integrating academic skills in the context of agriculture” ($M = 4.03, SD = 0.86$), and “teaching occupation skills” ($M = 4.02, SD = 0.85$). This subgroup disagreed that SBAE curriculum at the secondary level is “providing industry certification/licensing” ($M = 2.82, SD = 1.04$).

Teacher educators were uncertain as to 15 of the 17 current outcomes of SBAE curriculum. They did agree that the current outcome of SBAE curriculum at the secondary level was “teaching traditional production agriculture” ($M = 4.17, SD = 0.74$) and “teaching leadership skills” ($M = 4.06, SD = 0.78$). Teacher educators disagreed that SBAE curriculum was “increasing awareness of global agriculture” ($M = 2.85, SD = 1.00$).

Finally, state agricultural education program leaders agreed with 9 of the 17 current outcomes of SBAE curriculum. These state agricultural education program leaders were uncertain with the current outcomes of “preparing students for careers in agriculture” ($M = 3.90, SD = 3.83$), “encouraging wise management of the environment” ($M = 3.84, SD = 0.74$), “developing higher-order thinking skills” ($M = 3.83, SD = 0.83$), “preparing students for technical schools” ($M = 3.79, SD = 0.81$), “cultivating student

entrepreneurship” ($M = 3.78, SD = 0.93$), and “increasing awareness of global agriculture” ($M = 3.49, SD = 0.96$). The state agricultural education program leaders disagreed with the current outcome of “providing industry certification/licensing” ($M = 2.84, SD = 1.04$).

Objective Four

Objective four sought to describe the discrepancy found in the perceptions of agricultural education professionals regarding the purpose and current outcome of SBAE curriculum. “Increase awareness of global agriculture” (MWDS = 4.39) ranked first, while “develop higher-order thinking skills” (MWDS = 4.38) ranked second. “Preparing students for technical schools (MWDS = 0.91) ranked 16th and “teach traditional production agriculture” (MWDS= -.055) ranked last.

Mean weighted discrepancy scores (MWDS) were also calculated and overall ranking of constructs were reported for each of the three subgroups. “Increase awareness of global agriculture” ranked first with both SBAE teachers (MWDS = 3.39) and state agricultural education program leaders (MWDS = 4.66) while it was second with teacher educators (MWDS = 4.20). “Develop higher-order thinking skills” ranked first with teacher educators (MWDS = 4.40) and second with SBAE teachers (MWDS = 3.38) and state agricultural education program leaders (MWDS = 4.24). All three subgroups ranked “prepare students for technical schools” in the 16th position with a MWDS of 0.80 for SBAE teachers, -0.50 for teacher educators and 1.28 for state agricultural education program leaders. “Teach traditional production agriculture” ranked last in all three groups with a MWDS of -0.05 for SBAE teachers, -2.74 for teacher educators and -0.64 for state agricultural education program leaders.

To further describe the purpose of SBAE curriculum, a factor analysis was conducted with the 17 purposes. From this factor analysis, five factors were created and MWDS were calculated to determine the overall rankings. Table 29 shows the MWDS and rankings for the five factors. “Personal Development” was considered a very high priority with a MWDS of 4.38. “Ag as Applied Science” (MWDS = 3.24) and “Agricultural Awareness” (MWDS = 3.04) were considered high priorities. “Post-Secondary Preparation” was a low priority with a MWDS of 2.13 and “Teaching Vocational Skills” was a very low priority with a MWDS of 1.43.

SBAE teachers (MWDS = 4.59) and state agricultural education program leaders (MWDS = 4.46) reported that “Personal Development” was the highest priority in the SBAE curriculum component, while teacher educators reported that “Ag as Applied Science” (MWDS = 4.01) was the highest priority. SBAE teachers (MWDS = 3.86) and state agricultural education program leaders (MWDS = 3.28) rated “Ag as Applied Science” as their second priority. Teachers educators reported that “Personal Development” (MWDS = 3.99) was the second priority among the five factors. All three subgroups placed “Agricultural Awareness” the third priority; however, it was still a high priority. “Post-Secondary Preparation” was the fourth priority for all three subgroups and MWDS placed it as a low priority. Finally, all three subgroups placed “Teaching Vocational Skills” as their lowest purpose in the SBAE curriculum component and it received a very low priority.

Objective five

After a factor analysis reduced the number of purposes from 17 to five, a multivariate analysis of variance (MANCOVA) was used to determine the affect of role

within agricultural education and regional locale on the five new dependent variables that resulted from the factor analysis.

Teacher educators in Regions I ($M = 4.63$) and Region III ($M = 4.48$). reported the highest means in “personal development.” They reported the lowest mean scores in Region II ($M = 4.44$), Region IV ($M = 4.48$) and Region VI ($M = 4.51$). State agricultural education program leaders had the highest mean score in Region II ($M = 4.79$), Region IV ($M = 4.76$), Region V ($M = 4.68$) and Region VI ($M = 4.78$). This group also reported the lowest mean score in Region III ($M = 4.44$). SBAE teachers reported the lowest mean in Region I ($M = 4.58$) and Region V (4.42).

When reporting their perceptions regarding the purpose of SBAE curriculum to “teach vocational skills,” SBAE teachers reported the largest mean in Region I ($M = 4.36$) and Region VI ($M = 4.22$). Region IV of this group reported the lowest mean at 4.14. Teacher educators reported the highest mean in Region III ($M = 4.19$); however, they had the low mean in Region I ($M = 2.27$), Region II ($M = 3.94$), Region V ($M = 4.20$) and Region VI ($M = 4.10$). State agricultural education program leaders were the highest mean in Region II ($M = 4.39$), Region IV ($M = 4.41$) and Region V ($M = 4.38$). This group also had the lowest mean in Region III ($M = 4.00$).

State agricultural education program leaders reported the highest mean in five of the six regions regarding the purpose “post secondary preparation.” In region I their mean was 4.19, Region II was 4.22, Region III was 3.60, Region IV was 3.98 and Region V was 4.27. SBAE teachers reported the largest mean ($M = 4.05$) in Region VI. Teacher educators were the lowest mean score in all six regions with a mean of 3.46 in Region I,

3.30 in Region II, 3.13 in Region III, 3.45 in Region IV, 3.55 in Region V and 3.77 in Region VI.

When reporting on the purpose of “agriculture as applied science” SBAE teachers reported the highest mean ($M = 4.25$) in Region III while reporting the lowest mean in Region I ($M = 4.14$), Region V ($M = 3.92$) and Region VI ($M = 4.06$). Teacher educators reported the highest mean in Region I ($M = 4.44$) and Region VI ($M = 4.20$). Teacher educators reported the lowest mean in Region II ($M = 4.00$) and Region IV ($M = 4.13$). State agricultural education program leaders reported the highest mean in Region II ($M = 4.42$), Region IV ($M = 4.31$) and Region V ($M = 4.23$). This group reported the lowest mean in Region III ($M = 4.10$).

In the final category of SBAE curriculum’s purpose to be agricultural awareness, SBAE teachers in region IV had the highest mean at ($M = 4.57$); however, they were the lowest mean in Region V ($M = 4.39$) and Region VI ($M = 4.59$). Teacher educators in Region I ($M = 4.54$), Region III ($M = 4.53$) and Region VI ($M = 4.64$) had the highest mean while they reported the lowest mean in Region II ($M = 4.39$). State agricultural education program leaders had the highest mean in Region II ($M = 4.73$) and Region V ($M = 4.44$) and the lowest mean in Region I ($M = 4.46$), Region III ($M = 4.40$) and Region IV ($M = 4.45$).

A MANCOVA Hotelling’s Trace (T2) test of main was used to show effects of role within agricultural education and regional locale regarding their contribution to the difference in each dependent variable. Role within agricultural education was significant ($F = 2.58, p = 0.01$) in the perception regarding the purpose SBAE curriculum, as was regional locale ($F = 2.99, p = 0.01$).

Conclusions and Implications

Objective One

In this study, a majority of respondents were SBAE teachers which are representative of the proportional sampling method that was used to select the frame. Compared to other professional roles, teacher educators have the most experience in agricultural education followed closely by state agricultural education program leaders. Teacher educators are older than their professional counterparts. It is also concluded that a majority of agricultural education professionals are male. The SBAE teacher subgroup reported the largest percentage of female respondents, followed by state agricultural education professionals and then teacher educators. A master's degree is the average degree attained by agricultural education professionals. Finally, the largest number of respondents for this study came from Region II (Southwest states) and the least amount of respondents came from Region III (Midwest States).

Objective Two

Agricultural education professionals have a general consensus regarding the purpose of SBAE curriculum. Specifically, all three subgroups agreed that "teaching leadership skills" is a high-priority purpose of SBAE curriculum. This conclusion is consistent with research indicating that leadership is an invaluable skill to be taught in SBAE curriculum (Bass & Avolio, 1994; Bennis, 1989; Greene, 1992; Kouzes & Posner, 1987; Morgan, 2004; Morgan & Rudd, 2006; Vaughn & Moore, 2000). It also supports Rickets & Rudd's (2002) finding that leadership should be taught in SBAE curriculum because students who have been taught leadership skills are better prepared to serve in leadership roles.

Agricultural education professionals agreed that SBAE curriculum should teach life skills, such as the ability to deal with demands and challenges of the real world, money management, and organization. This conclusion is supported by prior research that emphasized the importance of teaching life skills as a way to prepare students to be more than productive workers (Brock, 1992; Wigenbach & Kahler, 1997).

Developing higher-order thinking skills was another purpose that was agreed upon by all three subgroups of agricultural education professionals. Decision making, critical thinking, analysis and problem solving are important elements that should be included in the SBAE curriculum. Researchers have long supported the idea of teaching higher levels of cognition and the importance of critical thinking (Cano, 1990; Cano & Newcomb, 1990; Cano & Martinez, 1989; Edwards & Briers 2001; Parr & Edwards, 2004; Torres & Cano, 1995; Ware and Kahler, 1988).

It can be implied from this study that developing interpersonal communication skills is another purpose that agricultural education professionals believe SBAE curriculum should strive to achieve. Researchers have cited the importance of interpersonal communication skills to SBAE curriculum numerous times (Billings, 2003; Busse, 1992; Gardner, 1987; National Association of Colleges and Employers, 2003; Riesenberg, 1992; Robinson, 2006; van Linden & Fertman, 1988). Other researchers have stressed the importance of interpersonal communication skills to future career choices (Atkins, 1999; Candy & Crebert, 1991; Evans, Rush & Berdrow, 1998; Hershey, Bland & Johnson, 2001; Hewitt, 2005); thus, making this a significant purpose for SBAE curriculum.

The desire to improve self, defining one's ethics, values and morals, developing aspirations and goals, and improving one's lifestyle regarding health, wealth, family, community and friends are examples of personal development skills which, based on implications from agricultural education professionals, should be a purpose of SBAE curriculum. Prior research has identified the importance of teaching personal development in SBAE curriculum (Case & Whitaker, 1998; Lockaby, 1987; Lockaby & Vaughn, 1999).

Teaching agricultural literacy is another purpose that agricultural education professionals agree should be included in SBAE curriculum. This supports previous research that acknowledges the importance of agricultural literacy as a purpose of SBAE curriculum (Balschweid, Thompson, & Cole, 1998; Flood, 1993; Frick, Kahler, & Miller, 1990; Knoblock & Martin, 2002; Igo & Leising, 1999; Lichte, & Birkenholz, 1993; Luthman, Ewing, & Whittington, 2007; Nordstrom et al, 1999; Traxler, 1990). The National Council for Agricultural Education (2002) encouraged all students to be literate in agricultural, food, fiber and natural resources systems. This would support the conclusions of this study that agricultural literacy should be a purpose of SBAE curriculum.

Agricultural education professionals in this study concluded that integrating academic skills in the context of agricultural was a purpose of SBAE curriculum, thus supporting extensive research that has been done regarding the integration of academics and SBAE (Balschweid, 2002; Balschweid. & Thompson, 2002; Boone, Gartin, Boone, Hughes , 2006; Chiasson & Burnett, 2001; Conroy & Walker, 2000; Dyer & Osborne, 1999; Enderlin & Osborne, 1992; Enderlin, Petrea, & Osborne, 1993; Hamilton &

Swortzel, 2007; Layfield, Minor, & Waldvogel, 2001; Myers, Washburn & Dyer, 2004; Ricketts, Duncan, & Peake, 2006; Roegge & Russell, 1990; Thompson & Schumacher, 1998; Whent & Leising, 1988). It has been noted that teachers from other disciplines believed that agricultural education would be an ideal platform to teach science and math skills (Osborne and Dyer, 1998).

Teaching non-traditional agriculture should be a purpose of SBAE curriculum as agreed upon by agricultural education professionals. Non-traditional agriculture includes teaching such programs as aquaculture, vet tech, small animal care and floriculture. This conclusion supports prior research that has been done regarding non-traditional programs, (El-Ghamrini, 1996; Wingenbach, Gartin, & Lawrence, 1999). Goals for SBAE curriculum to include included floriculture, horticulture and other non-traditional programs have also been identified (Case and Whitaker, 1998). The National FFA's *10 X 15 Long Range Goals for Agricultural Education* initiative emphasizes the need for new programs within SBAE to parallel demands of the current agriculture industry (The National FFA Organization, 2007), thus, supporting the conclusion of agricultural education professionals to make teaching non-traditional agriculture a purpose of SBAE curriculum. This study implies that non-traditional agriculture is significant to the purpose of SBAE curriculum. In order for SBAE programs to grow and prosper in the current society, they must incorporate curriculum that supports the demands of industry and society.

Environmental science and natural resources is an area within SBAE curriculum where agricultural education professionals and researchers agree; wise management of the environment should be a purpose of SBAE curriculum (Alonge & Martin, 1995;

Marshall & Herring, 1991; Marshall & Herring, 1991; Wade, 2000; Williams & Dollisso, 1998, Williams & Wise, 1997). To encourage more participation in environmental issues, the National FFA Organization (2008) also supported environmental issues and implemented an Environmental Science and Natural Resources career development event and an Environmental Science and Natural Resources proficiency award to recognize FFA members who implement environmental science and natural resources into their supervised agricultural experience programs. This would imply that environmental science and natural resources is a curriculum area that should be included in SBAE curriculum.

It can also be concluded that increasing awareness of global agricultural is another purpose that agricultural education professionals believe should be included in the SBAE curriculum. Researchers have concluded that international experience and education about global agricultural are vital to the future of America's agricultural industry (Marshall, Flowers & Moore, 2007; Odell et al 2002; Zhai & Scheer, 2002). Policymakers and the general public also agree that if the United States is to be competitive in the globalization of agriculture, students must be taught the skills necessary to participate in international policies and markets (Artiles, 2003; Torres, 2002).

Agricultural education professionals believe that another purpose of SBAE curriculum should be preparing students for careers in agriculture. Studies continue to project growth in agriculture-related career opportunities but a deficit of graduates in related agricultural majors to exists (Ellis, & Letourneau, ND; Esters & Bowen, 2004; Helm & Straquadine; Oleksy, 2001; Rayfield, 2008). Many of these positions will be in

areas that support the marketing and distribution of agricultural commodities, in addition to the production sector of agribusiness operations.

Another purpose of SBAE curriculum is to prepare students for both two and four year colleges and universities. With the reauthorization of the Carl D. Perkins Act, the United States Department of Education (2004) emphasized the purpose of schools to prepare every student for an education beyond high school. Gary Moore (2004) concluded that preparing students for college was one of the purposes of SBAE education when viewed from the prospective of stake holders within the profession. Although college prep seems like a positive thing, Trexler and Leonardo (2004) addressed the tension that arose in California when agricultural education professionals had to deal with pressures that were created when programs began teaching with the purpose of preparing students for college.

Cultivating student entrepreneurship should be a purpose of tSBAE instructional component according to agricultural education professionals in this study. Researchers have asserted that developing entrepreneurship skills through supervised agricultural experience (SAE) programs is a vital part of SBAE curriculum (Barrick, Hughes, & Raker, M., 1991; Camp, Clarke, & Fallon, 2000; Case & Whitaker, 1998; Dyer & Osborne, 1995; Dyer & Osborne; 1996; Retallick & Martin, 2004; Retallick & Martin, 2005; White & Pals, 2004). The Venn diagram illustrating SBAE has SAE as one of the primary and fundamental purposes (National FFA Organization, 2008), thus, supporting the findings of this study regarding the purpose of developing student entrepreneurship.

Teaching occupational skills should be another purpose of SBAE curriculum. This supports research that has claimed the importance of occupational training to SBAE

curriculum (Asche, 1991; Borthwick, 1995; Kalme & Dyer, 2000; Moore, 1987; Price, 1990; Straquadine, 1988; Trexler & Leonardo, 2004). It also supports the original foundations that were the premise of vocational agricultural (Lindholm, 1997; Patterson, 2008; Sanderson, 1996; Scott & Sarkees-Wircenski, 1996; Smith, 1999). This particular purpose has, however, been a topic of debate by parents who are concerned with the emphasis of vocational training in SBAE curriculum (Osborne & Dyer, 2000).

Based on the findings of this study, it was concluded that agricultural education professionals were unsure as to whether preparing students for technical schools should be a purpose of SBAE curriculum. This may be explained by the fact that technical schools are sometimes considered less elite than four-year, post-secondary schools (Leas, ND). Researchers have suggested that technical schools have a positive influence in pedagogy and content (Bailey et al., 2004; Grubb, 1996; Urquiola, et al, 1997); however, technical schools are often considered less academic and, thus, less important than colleges and universities.

Agricultural education was founded on the basis of teaching skills that would enable young men to become more proficient farmers and ranchers (Bailey, 1909); however, it was concluded that agricultural education professionals in this study were unsure as to whether teaching traditional production agriculture should be a purpose of current SBAE curriculum. This would support the finding of Cano (1998) that a large number of SBAE programs are moving away from a production agriculture focus to emphasize newer, non-traditional agricultural practices. The National Research Council's 1988 report *Understanding Agriculture - New Directions for Education*, also recommended that major revisions be made in SBAE curriculum so as to include new

curriculum components to more adequately prepare students for jobs in natural resources, agribusiness, marketing, management, and national and international economics. Based on this recommendation and the finding of this study, it can be implied that traditional production agriculture is becoming the least important part of SBAE curriculum. Even though production agriculture is the original foundation of SBAE in secondary schools, the change in societal and legislative demands have created other needs that are more relevant to modern SBAE students.

Finally, it was concluded that agricultural education professionals were unsure as to whether SBAE curriculum should provide industry certification/licensing. This goes against a specific, measured standard in the National Council for Agricultural Education's *National Quality Program Standards for Secondary (grades 9-12) Agricultural Education* that is used to evaluate current SBAE programs. Industry certification is also included on the path of the Office of Career and Technical Education's industry credentialing initiative which encourages students to work toward earning an industry certification, achieving a state licensure, or passing an occupational competency. Programs such as *Path to Industry Certification* target high school seniors who are not planning to attend college and are unqualified for the career of their choice (Virginia Department of Education, 2004). Based on this conclusion two questions arise. Do agricultural education professional understand the importance of industry certification/licensing? Who do agricultural education professionals feel should be providing industry certification/licensing?

Objective Three

Agricultural education professionals agree that SBAE curriculum is currently teaching leadership skills, agricultural literacy, occupational skills, and personal development. SBAE curriculum is also developing interpersonal communication and life skills. These conclusions support the mission statement of the National FFA Organization which emphasizes the importance of preparing students for premier leadership and personal growth (National FFA Organization, 2008).

As a profession, this group is unsure whether SBAE curriculum is currently teaching traditional production or non-traditional agriculture. The group further posits that they are unsure if SBAE curriculum is integrating academic skills in the context of agriculture, preparing students for college/university, cultivating student entrepreneurship or encouraging wise management of the environment. Furthermore, it was concluded by agricultural education professionals that they are unsure if SBAE curriculum is preparing students for technical schools, developing higher-order thinking skills, preparing students for careers in agriculture or increasing awareness of global agriculture. With so many “unsure” answers, the question can be raised: Is SBAE curriculum currently meeting the agricultural education mission of preparing students for successful careers and a lifetime of informed choices in the global agriculture, food, fiber and natural resources systems? Finally, based on the findings from this study, agricultural educational professionals disagree with the current outcome of SBAE curriculum regarding its ability to provide industry certification/licensing.

It can be implied that agricultural education professionals are placing a large emphasis on multiple purposes that need to be addressed by SBAE curriculum. It can

also be implied that these same agricultural education professionals do not believe that SBAE curriculum is currently fulfilling the purposes that need to be addressed. Can SBAE teachers meet the expected curriculum goals when so many purposes have been placed on SBAE curriculum? Is SBAE curriculum trying to do too much, consequently creating a weakened outcome? Based on the findings of this study, there is a need for agricultural education professionals to establish a unified, realistic set of purposes that will guide SBAE curriculum.

Objective Four

High MWDS suggest that purpose far exceeds the current outcome regarding the purpose of SBAE curriculum. From this study, it can be implied that SBAE programs are not teaching enough awareness regarding global agriculture. It can also be implied that SBAE teachers and state agricultural education program leaders feel that increasing awareness regarding global agriculture is the most important need in SBAE curriculum. Learning about global agriculture is vital to the future success of agricultural education students (Artiles, 2003; Marshall, Flowers & Moore, 2007; Torres, 2002; Zhai & Scheer, 2002); however, this study suggests this element is being left out of SBAE curriculum. The National Council for Agricultural Education set forth a strategic plan for agricultural education (2000) including a goal to increase the education of SBAE students regarding the world marketplace. If agricultural education students are going to respond to the world's agricultural demands, then SBAE needs to increase global agricultural issues in its curriculum.

SBAE curriculum has strived to provide rigor and relevance and the *National Quality Program Standards for Secondary (Grades 3-12) Agricultural Education*

initiative (2007) sets forth a measurement tool to enable SBAE programs to monitor their ability to maintain high quality curriculum. It was concluded by the large MWDS for the competency of developing higher-order thinking skills that high academic achievement by students is in jeopardy and should be reinforced in the SBAE curriculum. The importance of developing higher-order thinking skills is an area where improvement is constantly being encouraged and monitored (Cano, 1990; Cano & Newcomb, 1990; Cano & Martinez, 1989; Edwards & Briers 2004, Parr & Edwards, 2004; Torres & Cano, 1995; Ware and Kahler, 1988). It can also be implied that teacher educators feel that developing higher-order thinking skills is the greatest need in SBAE curriculum.

Even with research proving the importance of meeting academic integration requirements set forth by the 2001 No Child Left Behind (Martin, Fritshe & Ball, 2006), agricultural education professionals continue to report a large MWDS between the purpose and current outcome of integrating academic skills in the context of agriculture. According to these professionals, SBAE curriculum is currently falling short of meeting integration requirements set forth by NCLB and the most recent Carl D. Perkins Vocational and Applied Technology. According to the 2006 Carl D. Perkins Act, there is a serious emphasis for SBAE curriculum to link academic and technical content (United States Department of Education, 2006). Based on this study, it was concluded that SBAE teachers feel that integration of academic skills in the context of agriculture is occurring more than teacher educators and state agricultural education program leaders believe. It can be implied that teacher educators and state agricultural program leaders feel more needs to be done to bridge the gap that occurs between purpose and current outcome. This would support the research of Roberts and Ball (2009) who ascertain that that SBAE

curriculum has transitioned to programs that emphasize core academic knowledge but at a pace that is not meeting the current employment needs.

The development of leadership skills, life skills, interpersonal communication skills and personal development has been a vital part of SBAE curriculum. MWDS between the purpose and current outcome of SBAE curriculum show that more efforts need to be taken in order to fulfill the goals set forth for SBAE curriculum. The idea of placing more emphasis on leadership development has been acknowledged in multiple research articles (Dormandy & Severs, 1994; Ricketts & Newcomb; Rutherford et al, 2002; Townsend & Carter, 1983; Wingenback, 1995); however, this study finds that more needs to be done in this area. It can also be implied that previous efforts, such as *Lifeknowledge*® and the 2000 strategic plan for agricultural education goal of expanding the “whole person” concept of education including leadership, personal and interpersonal communication skills, have fallen short of their expectations. Teacher educators believe that adequate leadership skills are being taught through SBAE curriculum. SBAE teachers and state agricultural education program leaders believed that more leadership should be taught. State agricultural education program leaders and SBAE teachers believed that more needs to be taught regarding the development of life skills. All three groups believe that more needs to be taught regarding interpersonal communication skills and personal development. Overall, the implication regarding these “leadership-based” competencies is that SBAE curriculum is not doing enough to meet the perceived purpose which has been outlined by the participants of this study.

Another large MWDS occurred with the competency of encouraging wise management of the environment. SBAE curriculum should be taking a bigger stand on

teaching environmental and natural resources management; however, it can be implied by this study that SBAE curriculum is falling short of the needs that have been placed on said curriculum. This would support the National Council for Agricultural Education (2004) when they emphasized a concern in this area and set forth a strategic plan to update and expand curriculum in an effort to better handle environmental and natural resource issues. Because of high MWDSs from all three agricultural education profession groups, it can be concluded that SBAE is not meeting the needs as perceived by participants in this study.

Preparing students for careers in agriculture has long been a purpose of SBAE curriculum (Hillison, 1996); however, according to the agricultural education professionals' large MWDS in "preparing students for careers in agriculture," there is a discrepancy between what SBAE curriculum should be doing and what it is done regarding career preparation in the agricultural industry. This discrepancy supports the basic mission of agricultural education to prepare and support individuals for careers within the food, fiber, and natural resources system (Case & Whitaker, 1998). All agricultural education professionals feel that the SBAE curriculum is not doing enough to meet the perceived goals of preparing students for careers in agriculture.

SBAE curriculum is also falling short on preparing students for colleges that award advanced degrees. This conclusion can be viewed as a concern in the profession considering that the latest Carl D. Perkins legislation encourages SBAE programs to prepare students for education beyond high school (United States Department of Education, 2004). It should also be noted that many stakeholders believe SBAE curriculum should prepare students for college and/or technical school (Bailey et al.,

2004; Grubb, 1996; 1997; Moore, 1994). Agricultural education professionals agree with this research, as they reported that much more needed to be done regarding this competency.

MWDS between the purpose and current outcome of teaching agricultural literacy indicate that SBAE curriculum is not meeting the demands of teaching literacy that have been placed on the profession. The fact that the National Council for Agricultural Education (2002) encouraged all students to be literate in agricultural, food, fiber and natural resources systems would imply that SBAE curriculum needs to take more initiative in meeting the goals set forth regarding agricultural literacy. The agricultural education professionals' MWDS indicate that SBAE curriculum needs to do more regarding the teaching of agricultural literacy. This conclusion supports previous research ascertaining that agricultural literacy is a valuable purpose of the SBAE curriculum (Balschweid, Thompson, & Cole, 1998; Flood, 1993; Frick, Kahler, & Miller, 1990; Knoblick & Martin, 2002; Igo & Leising, 1999; Lichte, & Birkenholz, 1993; Luthman, Ewing, & Whittington, 2007; Nordstrom et al, 1999; Traxler, S., 1990).

The MWDS between the purpose and current outcome of teaching non-traditional agriculture concludes that SBAE curriculum needs to do more when it comes to teaching programs that are non-production oriented. Research has shown teaching non-traditional agricultural is important to the future of SBAE programs (Wingenbach, Gartin & Lawrence, 1999; El-Ghamrini, 1996; Case & Whitiker). If agricultural programs are going to achieve initiatives such as the National FFA Organization's *10 X 15 Long Range Goal for Agricultural Education* Initiative (National FFA Organization, 2007) and *Local Program Success*, then more effort needs to be initiated in this area of the SBAE

curriculum. Teacher educators indicated that the purpose of teaching non-traditional agriculture in SBAE curriculum is not being met based on the current outcome. It was also concluded that teacher educators perceive less of a need to teach more non-traditional agriculture than do SBAE teachers and state agricultural education program leaders.

Cultivating student entrepreneurship has been an integral part of SBAE curriculum since its inception (Retallick & Martin, 2005); however, SBAE curriculum is not achieving the goal of cultivating student entrepreneurship. The fact that the National Council for Agriculture (2008) set a goal to provide stimuli that will foster the spirit of free enterprise and develop creative entrepreneurship and innovation, reiterates the importance of cultivating student entrepreneurship. Agricultural education professionals do not agree on the ability of SBAE curriculum to cultivate student entrepreneurship. Teacher educators identified that SBAE curriculum is doing just about enough to meet the perceived purpose; however, SBAE teachers perceived that a significant amount should still be done in order to meet the purpose of SBAE curriculum in cultivating student entrepreneurship. State agricultural education program leaders feel that SBAE curriculum needs to do more in order to meet the goal of cultivating student entrepreneurship.

Teaching occupational skills is an important aspect of SBAE curriculum (Cano, 1998); however, based on MWDS it was concluded that SBAE curriculum is not meeting the purpose that is expected by agricultural education professionals in this purpose. SBAE teacher and state agricultural education program leaders agree with this need;

however, teacher educators perceived that too much is being done in SBAE curriculum regarding the education of occupation skills.

The MWDS of agricultural education professionals showed that more emphasis should be placed on the purpose of SBAE curriculum to “provide industry certification/licensing.” By addressing this purpose, programs will be able to meet standards set forth by the *National Quality Program Standards for High School (Grades 9-12) Agricultural Education* initiative (The National FFA Organization, 2007). Based on this study, it can be implied that agricultural education professionals disagreed with the level of need in this competency. State agricultural education program leaders reported that SBAE curriculum needs to place a considerable amount of emphasis on this competency in order to meet the purpose while SBAE teachers report this need is not as great. Teacher educators feel that too much emphasis is being placed on SBAE curriculum to provide industry certification/licensing.

Agricultural education professionals perceived that little effort needs to be given in order to meet the needs of preparing students for technical schools. Teacher educators also disagreed with SBAE teachers and state agricultural education leaders regarding the amount of need that is required to meet the purpose of preparing students for technical schools. Teacher educators report that too much emphasis is being placed on this competency. All three groups had this competency ranked 16th out of 17th in their rankings; thus, implying that preparing students for technical school is a lower priority for SBAE curriculum.

Agricultural education professionals in this study perceived that SBAE curriculum is teaching too much traditional production agriculture than is needed to fulfill

the expected purpose. This supports Cano's (1999) research that indicates that a large number of SBAE programs are moving from traditional to non-traditional agriculture. The fact that traditional production agriculture is being taught does support the goal of agricultural education to provide instruction in programs about the food, fiber and natural resources systems. SBAE teachers perceived that a very small need exists in this area, as compared to state agricultural education program leaders who report a larger need. It was also concluded from this study that teacher educators feel that too much traditional production agriculture is being taught in SBAE curriculum.

Objective Five

Regional locale and role within agricultural education are significant variables when considering the purposes of SBAE curriculum. Based on the findings of this study, it can be concluded that teaching personal development is a very important purpose of SBAE curriculum. Whether it is developing life skills, interpersonal communication skills, higher-order thinking skills or teaching leadership skills and personal development, SBAE teachers, teacher educators and state leaders all agree that personal development is of high priority in SBAE curriculum; thus supporting a plethora of research in this area (Cano, 1990; Cano & Newcomb, 1990; Cano & Martinez, 1989; Dormandy & Severs, 1994; Edwards & Briers 2004, Parr & Edwards, 2004; Ricketts & Newcomb; Rutherford et al, 2002; Torres & Cano, 1995; Townsend & Carter, Ware and Kahler, 1988; Whittington et al, 1997; Wingenback, 1995). It can also be concluded that state agricultural education leaders place a higher emphasis on personal development than do SBAE teachers and teacher educators. Agricultural education professionals in Region I, Region II, Region IV, and Region VI are in close agreement regarding the need for

personal development; while those in Regions II and Region V place less value on this purpose.

Agricultural education professionals also perceived that teaching agricultural literacy, encouraging wise management of the environment, increasing awareness of global agriculture and teaching non-traditional agriculture are important purposes within SBAE curriculum. This implication supports previous research conducted by Balschweid, Thompson, & Cole (1998) Knoblick & Martin, (2002), Luthman, Ewing, & Whittington (2007); and Wingenbach, Gartin & Lawrence (1990). It was also concluded that agricultural education professionals are in agreement regarding the importance of agricultural awareness as a purpose of SBAE. Regionally, agricultural education professionals in Region VI (the Eastern states) placed a larger emphasis on agricultural awareness than do the other five regions.

It was also concluded that agricultural educational professionals agreed with the purpose of agriculture as applied science; however, it was concluded that SBAE teachers have a lower expectation regarding this purpose than do state agricultural education program leaders and teacher educators. It was also concluded that teachers in Region V place a much smaller emphasis on this competency than do other regions. It was also concluded that Region II agricultural education professionals placed a larger emphasis on this competency than do others regions. Teaching agricultural literacy, wise management of the environment, increasing awareness of global agriculture and teaching non-traditional agriculture were included in agriculture as applied science and the agreement of agricultural education professionals regarding the importance of this to SBAE curriculum supported previous research that has posited the importance of academics

within SBAE (Case & Whitiker; 1999; El-Ghamrini, 1996; Jenkins, 2008; Wingenbach, Gartin & Lawrence).

Teaching traditional production agriculture and integration of academic skills in the context of agriculture factored into a group called “vocational skills.” Based on this study, all agricultural education professionals agree with the importance of teaching vocational skills, with the exception of teacher educators in Region II who were unsure as to whether this should be a purpose of SBAE curriculum. It was discovered that teacher educators, as a group, agreed less with this purpose than other agricultural education professionals. State agricultural education leaders from Region II, Region IV and V were more likely to agree with the purpose of teaching vocational skills than any other group. Finally, it was concluded that agricultural education professionals in Region III are far less likely to agree with the teaching vocational skills.

Factor analysis was used and five factors were abstracted from the original 17 purposes.. Included in these five are “Post-secondary Preparation,” “Leadership Development,” “Teaching Vocational Skills,” “Ag as an Applied Science,” and “Agricultural Awareness.” State agricultural education professionals perceived that post-secondary preparation should be a purpose of SBAE curriculum, while teacher educators and SBAE teachers were unsure of this purpose. Teacher educators were the least likely to agree with this purpose. Agricultural education professionals in Region III were less likely to agree with this purpose than those from other regions.

Overall, regional locale and role within the agricultural education profession influenced the perception regarding the purpose of SBAE curriculum. There were small differences among agricultural education professionals in the different regions; however,

there were few large discrepancies that accounted for the perceptions of overall purpose of SBAE curriculum.

Recommendations

Based on the findings of this study, there are numerous recommendations that should be taken into consideration by agricultural education professionals regarding the future of SBAE curriculum. With seventeen different characteristics being considered, the task of recommendations can be daunting; however, this study has provided insight as to which characteristics are the most important. It is important to consider the fact that these seventeen characteristics are the result of consolidating nearly seventy-five separate goals that were discovered among different entities regarding the purpose of SBAE curriculum (The National FFA Organization, 2008; Association for Career and Technical Education, 2003; National Council on Vocational Education, 1990; National Council for Agricultural Education, 2000; National FFA Organization, 2001; National FFA Organization, 2003; National FFA Organization, 2007; National Council for Agricultural Education, 2007). In the following recommendations, it is implied that SBAE teachers will be directly responsible for teaching SBAE curriculum to secondary students. It is further implied that teacher educators will be responsible for teaching and training prospective SBAE teachers regarding the proper use and instruction of SBAE curriculum. Finally, it is implied that state agricultural education program leaders will be responsible for a multitude of tasks including designing new programs and providing leadership to SBAE teachers and teacher educators as they continuously update SBAE curriculum and teacher preparation programs.

It is recommended that SBAE curriculum include more information regarding global agricultural issues. The existing curriculum needs to be updated to provide this information and teacher educators need to place more emphasis on the importance of teaching global agriculture. In an effort to meet the goals of the strategic plan for agricultural education (National Council for Agricultural Education, 2000), SBAE teachers need to ensure that global agriculture information is being taught to students. Finally, the National Council for Agricultural Education and The National FFA Organization should implement some type of program that would encourage students to learn more about the importance of global agriculture.

The next recommendation is that more higher-order thinking skills, such as critical thinking, problem solving, analysis and decision making, be incorporated in SBAE curriculum. Teacher educators need to ensure that student teaching interns are given the opportunity to learn, utilize, and demonstrate higher-order thinking skills. It is also recommended that all agricultural education professionals support *Project Lead the Way* that is encouraging the concept of higher-order thinking skills in education.

Based on the finding of this study, teaching students life skills has become an important purpose for SBAE curriculum; thus, SBAE curriculum needs to provide students with skills that will enable them to deal with demands and challenges of the real world. More emphasis should also be placed on money management and organization.

SBAE curriculum should also include more interpersonal communication skills. Teaching students the importance of using words to impart information or ideas, proper speaking techniques, and correct use of mail, email, and telephone are important skills that are needed by today's SBAE students. Teaching professionalism when using these

different forms of interpersonal communication is a skill that is vital to the future success of students regardless of their occupation or role in society.

Based on the findings of this study, teaching personal development skills is another curricular purpose that has been given credibility. SBAE curriculum needs to emphasize the importance of developing ethics, improving self, defining goals, aspirations, values and morals, as well as improving one's lifestyle in regard to health, wealth, family, community and friends.

It is recommended that agricultural literacy continues to be emphasized in SBAE curriculum. It is also recommended that agricultural education professionals encourage the education of agricultural literacy to all students, as well as adults and youth. These professionals should also encourage participation in a plethora of agricultural literacy programs that have been created to fulfill this need. Finally, state agricultural education staff needs to continue developing agricultural literacy programs that emphasize the importance of basic agricultural facts and lessons.

It is recommended that continued efforts be given to the integration of academic skills into SBAE curriculum. Based on prior research, integrating academics into SBAE curriculum improves the rigor and relevance of SBAE curriculum and helps students acquire a better grasp of the academic skills being taught. It is also recommended that the agricultural education professionals continue to support initiatives such as the *Curriculum for Agricultural Science Education (CASE)* initiative that encourage academic integration into SBAE curriculum.

Teaching more non-traditional programs is a recommendation that will allow SBAE curriculum to meet the demands for a modern society. Realizing that production

agriculture accounts for only 2% of the agricultural industry workforce, it is imperative that agricultural education professionals develop new programs that parallel the industry demands. It is also recommended that agricultural education professionals encourage SBAE professionals to continually develop new programs that will encourage students to participate in SBAE classes. SBAE teachers are encouraged to introduce new and modern classes that are interesting and significant to students.

Findings from this study, along with previous research, justify the recommendation that SBAE curriculum encourage wise management of the environment. Agricultural education professionals need to introduce more curricula that deals specifically with environmental issues and they need to incorporate environmental issues into curricula that are currently in place. Furthermore, additional educational programs need to be created that encourage students to become involved in environmental education.

Agricultural education was introduced to prepare young men for careers within production agriculture; however, over the years, the purpose has shifted to preparing all young people for careers within the industry of agriculture. Agricultural education professionals perceived that SBAE curriculum has fallen short of accomplishing this task; therefore, it is recommended that SBAE curriculum emphasize the importance and wise choice of careers within the industry of agriculture. Agricultural education professionals need to continue developing ways of informing students about the deficit that is being predicted for qualified graduates to fill the jobs needed within the industry of agriculture. Agricultural education professionals need to create more innovative ways to attract young people into SBAE programs.

It is further recommended that SBAE curriculum prepare student for both two and four year post-secondary schools, as well as technical schools. The United States Department of Education (2004) used the reauthorization of the Carl D. Perkins Act to emphasize the importance of preparing every student for an education beyond high school; therefore, it is recommended that agricultural education professionals continue research into the value of post-secondary schooling and the tension that has arisen between college prep and tech prep programs. It is further recommended that research be conducted regarding SBAE curriculum and its ability to prepare students for post-secondary school.

One of the major facets of SBAE curriculum has been the encouragement of students to participate in supervised agricultural education (SAE) programs as a way to cultivate entrepreneurship. It is recommended that SBAE curriculum and agricultural education professionals continue to emphasize the importance of cultivating student entrepreneurship through the use of SAEs. Research has continued to show the significance of SAEs; therefore, it is recommended that agricultural education professionals use this research to justify SAE's within SBAE curriculum. Parents, legislators, school administrators, students, business owners, community leaders and others need to be made aware of the benefits that SAE's provide.

Another recommendation for SBAE curriculum is that it continues to provide occupational skills. These skills need to provide SBAE students with employability skills that will enable them to gain employment within the agricultural industry. It is also recommended that these employability skills be extended to include skills necessary for job interviews, resume building and filling out applications. Multiple researchers have

claimed that occupational skill training is vital to the success of students; therefore, it is imperative that these skills be taught in SBAE curriculum.

Another recommendation from this study is for agricultural education professionals to provide industry certification/licensing when appropriate. It is recommended that agricultural education professionals become more involved with vocational certification, such as Virginia's *Path to Industry Certification* that encourages students who are not interested in post-secondary work to earn industry certification in an effort to be more marketable when entering the workforce.

Recommendations for Further Research

This study revolved around the perceptions of agricultural education professionals regarding the purpose and current outcome of SBAE curriculum. Information provided in the study reflects only the perceptions of SBAE educators, teacher educators who concentrate on teacher development, and state agricultural education program leaders; thus, there is a need for this study to be replicated using a frame of school administrators, legislature who have a significant role in SBAE curriculum development, business and industry leaders, parents of students in SBAE programs and SBAE students. Will comparisons with other groups yield a different set of perceptions regarding purpose and current outcome of SBAE curriculum?

In addition, a follow-up to this study in five and ten years with the same frame would be warranted to determine if perceptions regarding the purpose and current outcome of SBAE curriculum have changed over time. Will various initiatives in place today solve challenges being faced by SBAE curriculum? Will changes occurring in the

field of agricultural education affect the outcome of perceptions regarding purpose and outcome expected of SBAE curriculum?

A qualitative study with agricultural education professionals would be another study that could yield answers as to the purpose and current outcome of SBAE curriculum. Given the chance to elaborate on the seventeen characteristics used in this study, would agricultural education professionals introduce other purposes that were overlooked or overshadowed? Focus groups would be a great way to solicit this information and would yield information that could alter the purpose of SBAE curriculum.

Because of the large number of purpose and outcome variables in this research, a study is warranted that consolidates these into a smaller number, therefore possibly changing the perceptions reported by agricultural education professionals. A Delphi study would enable specific purposes of SBAE curriculum to be developed.

Now that the variables of interest (role in agricultural education and regional locality) have concluded that mean differences occur between groups, a study to explain these differences in greater detail is warranted. Are there particular variations between groups that will account for the different means expressed in this study? Can these differences account for variance in the purpose and outcome of SBAE curriculum? Although this study was able to identify perceptions regarding purpose and current outcome of SBAE curriculum based on several specific variables, there are undoubtedly other variables that are significant.

Finally, it is recommended that further research be done in the area of teaching traditional production agriculture. Findings from this study indicate that SBAE

curriculum is doing more than necessary in this area; however, the question may arise as to what is considered “traditional” production agriculture. It is important that SBAE, created with the sole purpose of teaching production agriculture, identify its basic purpose. Once this purpose is identified, agricultural education professionals need to determine what role production agriculture has within SBAE curriculum?

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Appendix A

Campus Institutional Review Board (IRB) Approval

Dear Investigator:

Your human subject research project entitled Perceptions of stakeholders in regards to the purpose of instruction in secondary agricultural education was reviewed and APPROVED as "Exempt" on April 01, 2009 and will expire on April 01, 2010. Research activities approved at this level are eligible for exemption from some federal IRB requirements. Although you will not be required to submit the annual Continuing Review Report, your approval will be contingent upon your agreement to annually submit the "Annual Exempt Research Certification" form to maintain current IRB approval. You must submit the "Annual Exempt Research Certification" form by February 15, 2010 to provide enough time for review and avoid delays in the IRB process. Failure to timely submit the certification form by the deadline will result in automatic expiration of IRB approval. (See form: <http://irb.missouri.edu/eirb/>)

If you wish to revise your activities, you do not need to submit an Amendment Application. You must contact the Campus IRB office for a determination of whether the proposed changes will continue to qualify for exempt status. You will be expected to provide a brief written description of the proposed revisions and how it will impact the risks to subject participants. The Campus IRB will provide a written determination of whether the proposed revisions change from exemption to expedite or full board review status. If the activities no longer qualify for exemption, as a result of the proposed revisions, an expedited or full board IRB application must be submitted to the Campus IRB. The investigator may not proceed with the proposed revisions until IRB approval is granted.

Please be aware that all human subject research activities must receive prior approval by the IRB prior to initiation, regardless of the review level status. If you have any questions regarding the IRB process, do not hesitate to contact the Campus IRB office at (573) 882-9585.

Campus Institutional Review Board

Appendix B

National FFA Permission Letter

Liza Markle
Marketing Specialist
National FFA Organization
6060 FFA Drive
P.O. Box 68960
Indianapolis, IN 46268-0960

Dear Ms. Markle,

My name is David Frazier and I am a PhD student at the University of Missouri. I was referred to you as the contact person for research questions. I would like permission to use the National FFA Organizations data base of names for agricultural teachers, teacher educators and state agricultural education program leaders for my dissertation entitled, "Perceptions of agricultural education professionals regarding the purpose and current outcome of SBAE curriculum."

Please contact me as soon as possible to let me know if I will be able to use these lists.

Sincerely,

David Frazier

Appendix C

National FFA Frame Permission Letter



National FFA Center
6060 FFA Drive
P.O. Box 68960
Indianapolis, IN 46268-0960
Phone: 317-802-6060
Fax: 317-802-6061

*The FFA Mission: FFA makes a positive difference in the lives of students by developing their potential for **premier leadership, personal growth and career success** through agricultural education.*

NATIONAL FFA ORGANIZATION

February 27, 2009

This letter serves as permission for David Frazier, University of Missouri Graduate Student, to utilize the National FFA Organization mailing list for one-time use in his research study outlined in the mailing list request form she submitted on February 18, 2009. By submitting the request form, he has read and understands the mailing list guidelines set forth by the National FFA Organization (copied below).

David Frazier was sent the FFA chapter mailing list on February 20, 2009, by Liza Markle.

Sincerely,

Liza Markle

Marketing Specialist

Marketing & Communications Division

317-802-4266

- Content of mailing must not be commercial in any manner
- Content of the mailing must not implicitly or explicitly connote an endorsement of the company or a product by the National FFA Organization
- Content of mailing must not include an advertisement to buy a product or service
- Content of mailing should be educational in nature or of a verifiable benefit to FFA chapters and/or advisors
- Content of mailing must not include any materials that:
 - contain sexually explicit matter
 - contain political interests or affiliations
 - promote the use of tobacco, drugs or weaponry
 - promote violence or hate toward any persons or groups
 - discriminate based on race, sex, age, religion, nationality, disability or sexual orientation
 - promote illegal activities
 - promote gambling or games of chance
 - in the sole judgment of FFA, is defamatory, fraudulent or harassing

- reference or compare your company to competitors by name
- Content of the mailing list is for a one-time use only and cannot be sold, shared, transferred or given to any third parties
- If a response mechanism is used, contact data received cannot be mined/saved for future use

Appendix D
Non-Disclosure Agreement

Non-Disclosure Agreement.

University of Missouri/David Frazier (Research Project: Intended outcome of agricultural education curriculum) agrees the FFA chapter mailing list (Data) furnished by the National FFA Organization is being furnished for the limited purpose of permitting University of Missouri/David Frazier (Research Project: Intended outcome of agricultural education curriculum) to process information in accordance with the agreed upon usage/mailling (Project) outlined in the submitted request form. University of Missouri/David Frazier (Research Project: Intended outcome of agricultural education curriculum) agrees to use the data only for such purpose and agrees to purge its computer system of the Data at the conclusion of the Project.

During the time the data is in its possession, University of Missouri/David Frazier (Research Project: Intended outcome of agricultural education curriculum) shall take the same precautions with respect to the data as it takes with its own confidential information. University of Missouri/David Frazier (Research Project: Intended outcome of agricultural education curriculum) shall inform and obtain an acknowledgement from any of its directors, officers, employees, agents, consultants or contractors who are given access to the data, such access to be given only to persons who have a need for the purposes set forth in Paragraph 1 above.

The term of this Nondisclosure Agreement shall begin on the date when University of Missouri/David Frazier (Research Project: Intended outcome of agricultural education curriculum) receives the data and shall continue until the conclusion of the Project. University of Missouri/David Frazier (Research Project: Intended outcome of agricultural education curriculum) has been provided with and understands the mailing list guidelines of the National FFA Organization.

This Nondisclosure Agreement shall inure to the benefit of and be binding upon the parties hereto and their respective successors, assigns, heirs, personal representatives and executors.

Signed  _____

Printed Name David Frazier _____

Title Graduate Assistant - University of Missouri

Date 2-18-09 _____



Appendix E

The Purpose and Current Outcome of SBAE Curriculum Instrument

Intended outcome of SBAE Curriculum Instrument

Section I: Purpose of School-Based Agricultural Education

Directions: Please rate your level of agreement with the statements below regarding your perception as to *the purpose* of school-based agricultural education curriculum.

1 = Definitely disagree

2 = Disagree

3 = Uncertain

4 = Agree

5 = Definitely Agree

The purpose of school-based agricultural education curriculum is to...

1. teach occupational skills 1 2 3
4 5

Examples including, but not limited to...

- a. vocational skills
- b. employability skills

2. provide industry certification/licensing 1 2 3
4 5

Examples including, but not limited to...

- a. welding
- b. pet groomer
- c. vet assistant

3. integrate academic skills in the context of agriculture 1 2 3
4 5
Examples including, but not limited to...
- a. science
 - b. math
 - c. social Studies
 - d. grammar
 - e. fine Arts
4. teach agricultural literacy 1 2 3 4 5
Examples including, but not limited to...
- a. a basic understanding of agriculture
 - b. appreciation of agriculture
 - c. societal significance of agriculture
5. encourage wise management of the environment 1 2 3 4 5
Examples including, but not limited to...
- a. conservation
 - b. water quality
 - c. natural resources
 - d. waste management
 - e. pollution
6. increase awareness of global agriculture 1 2 3 4 5
Examples including, but not limited to...
- a. global significance of agriculture
 - b. international marketing
 - c. global trends
 - d. trade policies
7. cultivate student entrepreneurship 1 2 3 4 5
Examples including, but not limited to...
- a. starting a business
 - b. business plans
 - c. SAE

8. teach “traditional” production agriculture 1 2 3 4 5
Examples including, but not limited to...
 a. food plant
 b. food animal production
 c. agricultural mechanics
9. teach “non-traditional” agriculture 1 2 3 4 5
Examples including, but not limited to...
 a. aquaculture
 b. small animal care
 c. vet tech
 d. horticulture
 e. floriculture
10. prepare students for technical schools 1 2 3
 4 5
Examples including, but not limited to...
 a. schools that provide employment preparation skills
 b. minimum work outside specialization
11. prepare students for college/university 1 2 3
 4 5
Examples including, but not limited to...
 a. two-year community colleges granting academic degrees
 b. four-year colleges and universities academic degrees
12. prepare students for careers in agriculture 1 2 3 4 5
Examples including, but not limited to...
 a. any career that falls under the general definition of agriculture
13. develop higher-order thinking skills 1 2 3
 4 5
Examples including, but not limited to...
 a. decision making
 b. critical thinking
 c. analysis
 d. problem solving

14. develop interpersonal communication skills 1 2 3 4 5
Examples including, but not limited to...
a. using words to impart information or ideas
b. speaking
c. communicating via mail, email and telephone
15. develop life skills 1 2 3 4 5
Examples including, but not limited to...
a. ability to deal with demands and challenges of the real world
b. money management
c. organization
16. teach personal development 1 2 3 4 5
Examples including, but not limited to...
a. desire to improve self
b. defining one's ethics, values and morals
c. developing aspirations and goals
d. improving one's lifestyle in regards to health, wealth, family, community and friends
17. teach leadership skills 1 2 3 4 5
Examples including, but not limited to...
a. ability to motivate others
b. ability to influence others
18. List other purposes of school-based agricultural education curriculum that were not included in the previous thematic areas.

Section II: What School-Based Agricultural Education curriculum is currently providing.

Directions: Please rate your level of agreement with the statements below regarding your perception as to *what* school-based agricultural education curriculum *is currently* doing.

1 = Definitely disagree

2 = Disagree

3 = Uncertain

4 = Agree

5 = Definitely Agree

School-based agricultural education curriculum is currently...

- | | | | | | |
|--|---|---|---|---|---|
| 1. teaching occupational skills | 1 | 2 | 3 | 4 | 5 |
| <i>Examples including, but not limited to...</i> | | | | | |
| a. vocational skills | | | | | |
| b. employability skills | | | | | |
| 2. providing industry certification/licensing | 1 | 2 | 3 | 4 | 5 |
| <i>Examples including, but not limited to...</i> | | | | | |
| a. welding | | | | | |
| b. pet groomer | | | | | |
| c. vet assistant | | | | | |
| 3. integrating academic skills in the context of agriculture | 1 | 2 | 3 | 4 | 5 |

Examples including, but not limited to...

- a. science
- b. math
- c. social Studies
- d. grammar
- e. fine Arts

4. teaching agricultural literacy 1 2 3 4 5

Examples including, but not limited to...

- a. a basic understanding of agriculture
- b. appreciation of agriculture
- c. societal significance of agriculture

5. encouraging wise management of the environment 1 2 3 4 5

Examples including, but not limited to...

- a. conservation
- b. water quality
- c. natural resources
- d. waste management
- e. pollution
- f. sustainable development

6. increasing awareness of global agriculture 1 2 3 4 5

Examples including, but not limited to...

- a. global significance of agriculture
- b. international marketing
- c. global trends
- d. trade policies

7. cultivating student entrepreneurship 1 2 3 4 5

Examples including, but not limited to...

- a. starting a business
- b. business plans
- c. SAE

8. teaching “traditional” production agriculture 1 2 3 4 5
Examples including, but not limited to...
 a. food plant
 b. food animal production
 c. agricultural mechanics
9. teaching “non-traditional” agriculture 1 2 3 4 5
Examples including, but not limited to...
 a. aquaculture
 b. small animal care
 c. vet tech
 d. horticulture
 e. floriculture
10. preparing students for technical schools 1 2 3 4 5
Examples including, but not limited to...
 a. schools that provide employment preparation skills
 b. minimum work outside specialization
11. preparing students for college/university 1 2 3 4 5
Examples including, but not limited to...
 a. two-year community colleges granting academic degrees
 b. four-year colleges and universities academic degrees
12. preparing students for careers in agriculture 1 2 3 4 5
Examples including, but not limited to...
 a. any career that falls under the general definition of agriculture
13. developing higher-order thinking skills 1 2 3 4 5
Examples including, but not limited to...
 a. decision making
 b. critical thinking
 c. analysis
 d. problem solving
14. developing interpersonal communication skills 1 2 3 4 5
Examples including, but not limited to...
 a. using words to impart information or ideas
 b. speaking
 c. communicating via mail, email and telephone

15. developing life skills 1 2 3 4 5

Examples including, but not limited to...

- a. ability to deal with demands and challenges of the real world
- b. money management
- c. organization
- d. hygiene

16. teaching personal development 1 2 3 4 5

Examples including, but not limited to...

- a. desire to improve self
- b. defining one's ethics, values and morals
- c. developing aspirations and goals
- d. improving one's lifestyle in regards to health, wealth, family, community and friends

17. teaching leadership skills 1 2 3 4 5

Examples including, but not limited to...

- a. ability to motivate others
- b. ability to influence others

18. List other perceptions as to what school-based agricultural education curriculum is currently doing that were not included in the previous thematic areas.

Section III: Demographic Information

1. What is your sex?
 - a. Female
 - b. Male

2. What is your major role in the agricultural education industry?
 - a. Agricultural Education Teacher
 - b. Teacher Educator
 - c. State Agricultural Education Staff

3. What is the highest degree you have earned?
 - a. Associates
 - b. Bachelors
 - c. Masters
 - d. Doctorate
 - e. Other

4. What state do you currently work in?

5. What is your age?

6. How many years have you worked in the agricultural education field?

7. How would you describe the community size in which you live?
 - a. Rural farm area
 - b. Rural non-farm area
 - c. Suburban
 - d. Urban

Appendix F

Panel of Experts

Panel of Experts

Dr. Dennis Duncan	University of Georgia	dwd@uga.edu
Dr. James Dyer	University of Florida	jedyer@ufl.edu
Dr. Tracy Kitchel	University of Kentucky	Tracy.kitchel@uky.edu
Dr. Grady Roberts	University of Florida	groberts@ufl.edu
Dr. Allen Talbert	Purdue University	btalbert@purdue.edu

Appendix G

Panel of Expert Initial Contact Letter

Dear (insert name):

My name is David Frazier and I am a graduate student from the University of Missouri working on my dissertation. My advisor, Dr. Anna Ball, has asked that I contact you and ask if you would serve on my panel of experts. Your expertise in quantitative research and your consistent professionalism in the field of agricultural education have made you the perfect expert to help in developing an instrument that is valid and reliable.

Please reply with a simple note telling me if you will be able to assist in this process. I realize that things are busy during the spring semester; however, your input would be greatly appreciated.

Thanks again,

David Frazier
Graduate Assistant
University of Missouri

Appendix H

Panel of Experts Letter

Dear (Insert name):

I would like to start by saying thank you again for assisting me in establishing validity on my dissertation questionnaire. Enclosed is a hard copy of the questions used to create the online format of the questionnaire. Today, you will be receiving a test sample of the actual online instrument which you can use to establish face validity.

The online instrument is divided into three sections.

- Section I: Purpose of School-Based Agricultural Education curriculum
- Section II: What School-Based Agricultural Education curriculum is currently providing
- Section II: Demographic information

Please email comments/concerns in regards to the online instrument to dcfkb4@mizzou.edu. You can include your comments/concerns to the online questionnaire with the hard copy of questions that I originally sent and return them in the self-addressed, stamped envelope that was provided. I can also be reached by phone at 325-660-4663, or by fax at 573-884-4444. If you have any questions, please do not hesitate to contact me. I would appreciate any feedback you can provide by March 25, 2009.

Again, I extend my thanks in advance for your assistance. With your feedback, and the feedback of others, this instrument should be very useful to this study and to any further study that wishes to assess the purpose of and current outcome of school-based agricultural education curriculum.

Thanks again,

David Frazier
Graduate Assistant
University of Missouri

Appendix I

Panel of Experts Hyperlink Email

Dear (Insert name):

I would like to start by saying thank you again for assisting me in establishing validity on my dissertation questionnaire. By now you should have received a hard copy of the questions used to create the online format of the questionnaire. Attached to this email is the HostedSurvey hyperlink that will guide you to the online instrument. .

Survey URL:

<http://www.hostedsurvey.com/takesurvey.asp?c=SBAEcurriculum&rc=haibo>

The online instrument is divided into three sections.

Section I: Purpose of School-Based Agricultural Education curriculum

Section II: What School-Based Agricultural Education curriculum is currently providing

Section II: Demographic information

Please email comments/concerns in regards to the online instrument to dcfkb4@mizzou.edu. You can include your comments/concerns to the online questionnaire with the hard copy of questions that I originally sent and return them in the self-addressed, stamped envelope that was provided. I can also be reached by phone at 325-660-4663, or by fax at 573-884-4444. If you have any questions, please do not hesitate to contact me. I would appreciate any feedback you can provide by March 25, 2009.

Again, I extend my thanks in advance for your assistance. With your feedback, and the feedback of others, this instrument should be very useful to this study and to any further study that wishes to assess the purpose of and current outcome of school-based agricultural education curriculum.

Thanks again,

David Frazier
Graduate Assistant
University of Missouri

Appendix J
Pilot Test Initial Letter

Dear (insert name):

My name is David Frazier and I am a third year doctoral student at the University of Missouri currently working on my dissertation. I am investigating the discrepancy between agricultural education professionals' perceptions of the purpose and current outcome of school-based agricultural education curriculum at the secondary level. You have been identified as a potential resource to utilize on my panel of experts to establish reliability of my instrument. Listed below is a link to the instrument I will be using for the data collection phase of my dissertation. I would greatly appreciate if you would take five minutes to complete the online instrument.

I am using a test-retest reliability so once I receive your responses, I will wait one week and resubmit the instrument to you for a second time. You will be asked to complete the exact instrument a second time; thus, enabling me to establish reliability of each question. I know that spring schedules are hectic; however, I hope that you can take a few minutes to assist me in this endeavor. Your expertise and experience will aide me greatly in this study.

You will not be asked to do anything other than complete the instrument on two different occasions. All answers will be kept confidential and reported only as group results for establishing reliability. If you have any questions, I can be reached via email at dcfkb4@mizzou.edu, by phone at 325-660-4663, or by fax at 573-884-4444. If you have any questions, please do not hesitate to contact me. If you are unable to assist in this process, please email me and let me know.

I extend a gracious "Thanks" in advance. With your assistance, and the assistance of others, this instrument should be very useful to this study and to any further study that wishes to assess the purpose of and current outcome of school-based agricultural education curriculum.

Survey URL:

<http://www.hostedsurvey.com/takesurvey.asp?c=SBAEcurriculum&rc=haibo>

Again, thank you for your assistance,

David Frazier
Graduate Assistant
Department of Agricultural Education
University of Missouri

Appendix K

Reliability Retest Letter

Dear (insert name):

I want to start by saying thank you for participating in the pilot testing of my dissertation questionnaire. As stated in my previous email, I am using a test/retest to establish reliability; therefore, ***I am asking you to complete the same questionnaire a second time.*** This will enable me to compare your first and second answers, thus; determining if the questions are reliable.

After completing the instrument a second time, your participation in the pilot study will be complete. As a reminder, all answers will be kept confidential and reported only as group results for establishing reliability. If you have any questions, I can be reached via email at dcfkb4@mizzou.edu, by phone at 325-660-4663, or by fax at 573-884-4444. Again, thank you so much for your participation in my pilot testing.

Sincerely,

David Frazier, Graduate Assistant
University of Missouri

Appendix L

Initial Contact with Sample

Dear (insert name):

My name is David Frazier and I am a third year doctoral student at the University of Missouri currently working on my dissertation. I am writing to inform you that you were randomly selected to participate in a national study that will investigate the discrepancy between agricultural education professionals' perceptions of the purpose and current outcome of school-based agricultural education curriculum at the secondary level. As an agricultural education professional, your perceptions will serve as a guide for future program development.

In one week, you will be receiving an invitation to participate in this study. It will include a hyper-link that will take you directly to the survey. The survey itself will take less than ten minutes to complete.

Your answers are completely confidential and will be released only as summaries in which no individual's answers can be identified. This survey is voluntary; however, you can help greatly by taking ten minutes to complete the instrument.

Should you have any questions, please do not hesitate to contact me via email at dcfkb4@mizzou.edu or by phone (325) 660-4663. You may also contact the University of Missouri Campus IRB Office at (573) 882-9585 for further information concerning human participation in research studies.

Again, I extend my thanks in advance for your assistance. With your feedback, and the feedback of others, the data gathered should be very useful to this study and to any further study that wishes to assess the purpose of and current outcome of school-based agricultural education curriculum.

Thanks again,

David Frazier, Graduate Assistant
University of Missouri

Appendix M

First Invitation to Participate in Study

Dear (insert name):

My name is David Frazier and I am a third year doctoral student at the University of Missouri currently working on my dissertation. I am writing to ask your help as I investigate the discrepancy between agricultural education professionals' perceptions of the purpose and current outcome of school-based agricultural education curriculum at the secondary level. As an agricultural education professional, your perceptions will serve as a guide for future program development.

Your answers are completely confidential and will be released only as summaries in which no individual's answers can be identified. This survey is voluntary; however, you can help greatly by taking ten minutes to complete the instrument.

Should you have any questions, please do not hesitate to contact me via email at dfkb4@mizzou.edu or by phone (325) 660-4663. You may also contact the University of Missouri Campus IRB Office at (573) 882-9585 for further information concerning human participation in research studies.

Please click the following link to access the questionnaire.

Survey URL: <http://www.hostedsurvey.com/takesurvey.asp?c=SBAEcurriculum&rc=balma>

Thank you in advance for your time and participation. I look forward to receiving your response by May 15, 2009.

Sincerely,
David Frazier Graduate Assistant
Department of Agricultural Education
University of Missouri

Appendix N

Second Invitation to Participate in Study

Dear (insert name):

I am writing a second time to request your help as I investigate the discrepancy between agricultural education professionals' perceptions of the purpose and current outcome of school-based agricultural education curriculum at the secondary level. As an agricultural education professional, your perceptions will serve as a guide for future program development.

Your answers are completely confidential and will be released only as summaries in which no individual's answers can be identified. This survey is voluntary; however, you can help greatly by taking ten minutes to complete the instrument.

Should you have any questions, please do not hesitate to contact me via email at dcfkb4@mizzou.edu or by phone (325) 660-4663. You may also contact the University of Missouri Campus IRB Office at (573) 882-9585 for further information concerning human participation in research studies.

Please click the following link to access the questionnaire.

Survey URL:

<http://www.hostedsurvey.com/takesurvey.asp?c=SBAEcurriculum&rc=balma>

Thank you in advance for your time and participation. I look forward to receiving your response by May 15, 2009.

Sincerely,

David Frazier Graduate Assistant
Department of Agricultural Education
University of Missouri

Appendix O

Third Invitation to Participate in Study

Dear (insert name):

This is just a small reminder asking you to please complete the questionnaire in regards to the discrepancy between agricultural education professionals' perceptions of the purpose and current outcome of school-based agricultural education curriculum at the secondary level. Your input is an invaluable part of this study and will help improve the future of secondary agricultural education.

According to many that have already responded, the study has been taking about *FIVE* minutes. I know that you are incredibly busy this time of the year and I thank you in advance for your participation.

Please use the hyper-link below to complete the study.

Should you have any questions, please do not hesitate to contact me via email at dcfkb4@mizzou.edu or by phone (325) 660-4663. You may also contact the University of Missouri Campus IRB Office at (573) 882-9585 for further information concerning human participation in research studies.

Sincerely,

David Frazier, Graduate Assistant
University of Missouri

Appendix P

Fourth Invitation to Participate in Study

Dear (insert name):

This is a final reminder asking you to please complete the questionnaire in regards to the discrepancy between agricultural education professionals' perceptions of the purpose and current outcome of school-based agricultural education curriculum at the secondary level. Your input is an invaluable part of this study and will help improve the future of secondary agricultural education.

According to many that have already responded, the study has been taking about *FIVE* minutes. I know that you are incredibly busy this time of the year and I thank you in advance for your participation.

Please use the hyperlink below to complete the study.

Should you have any questions, please do not hesitate to contact me via email at dcfkb4@mizzou.edu or by phone (325) 660-4663. You may also contact the University of Missouri Campus IRB Office at (573) 882-9585 for further information concerning human participation in research studies.

Sincerely,

David Frazier, Graduate Assistant
University of Missouri

Appendix Q

Cohen's D Effect Size

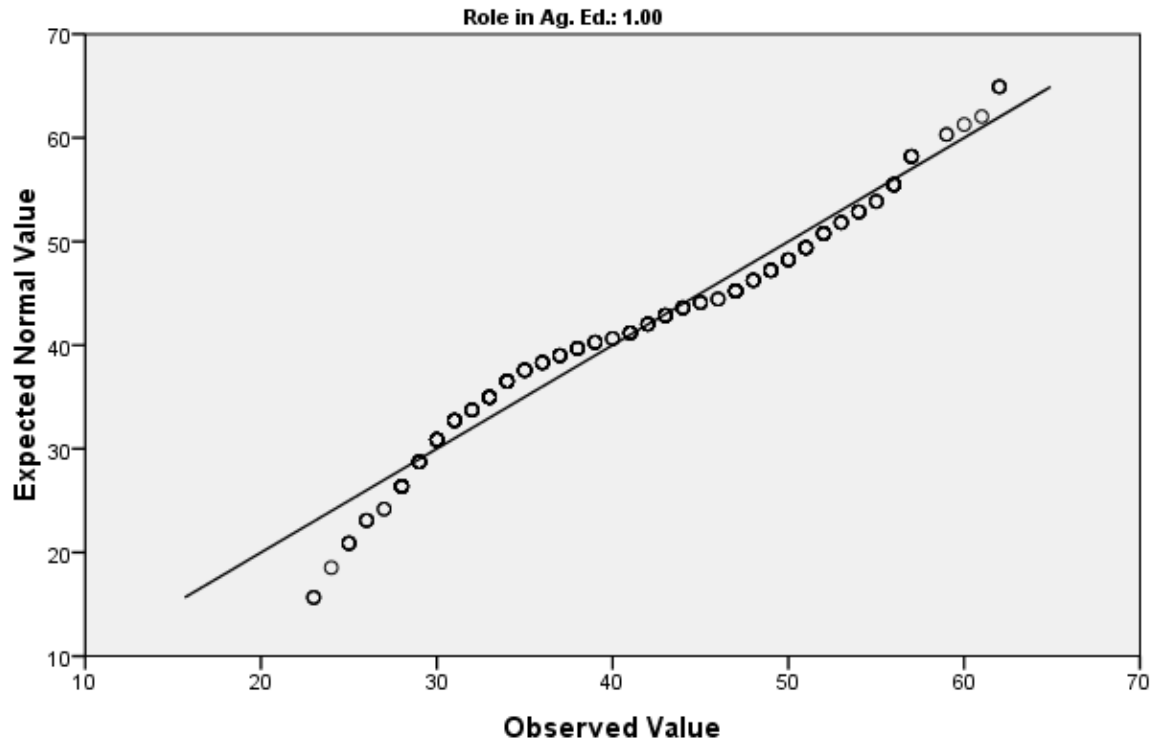
Cohen's *d* Effect Size

<u>Effect Size</u>	<u>Effect Size</u>
≥ 0.80	Large
0.5	Medium
0.2	Small
≤ 0.02	Negligible

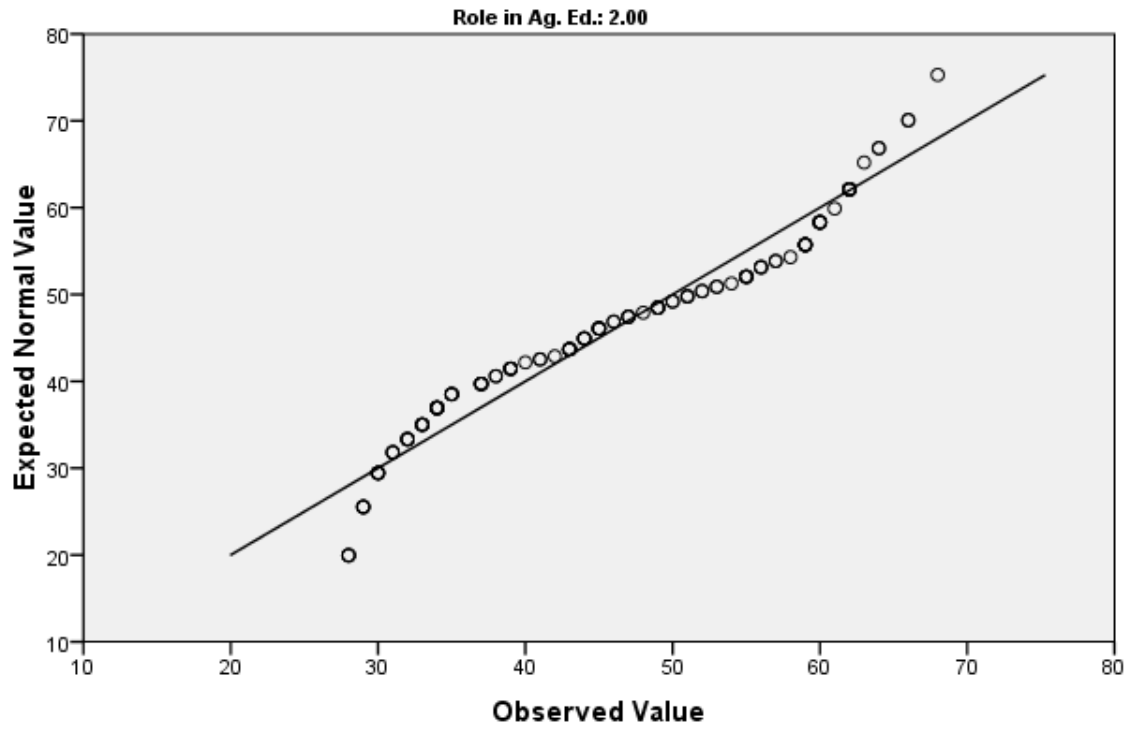
Appendix R

Q-Q Plots for Age

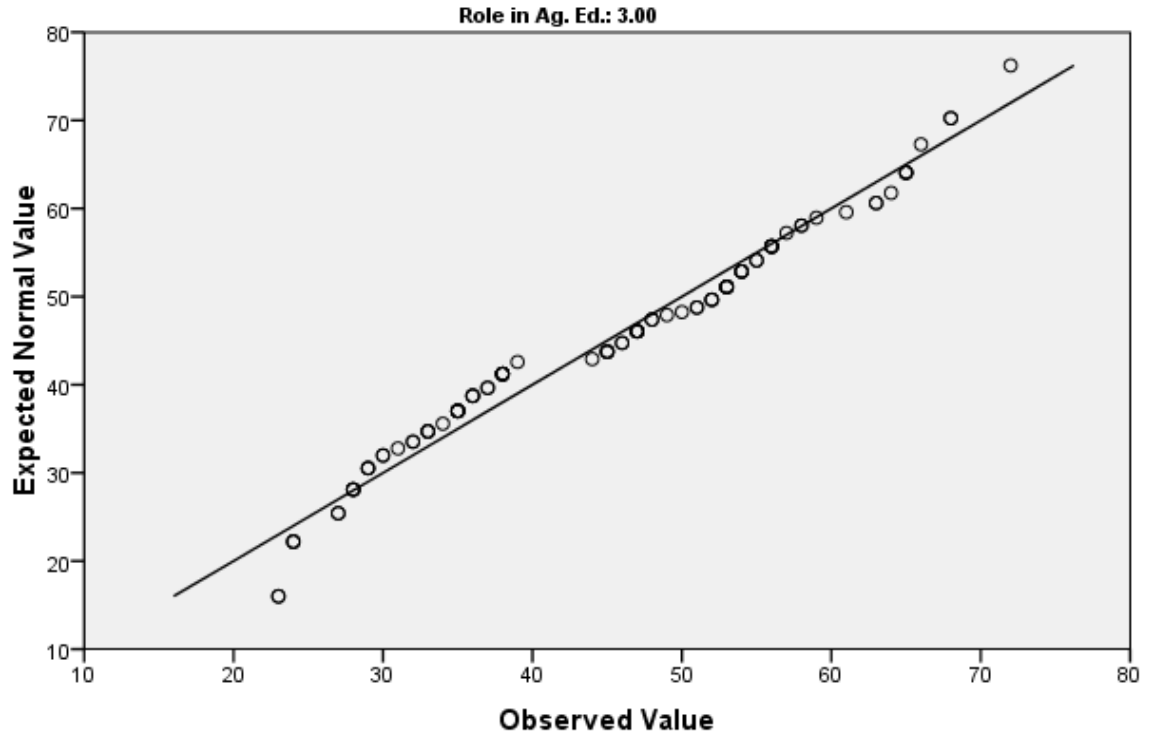
Normal Q-Q Plot of Age



Normal Q-Q Plot of Age



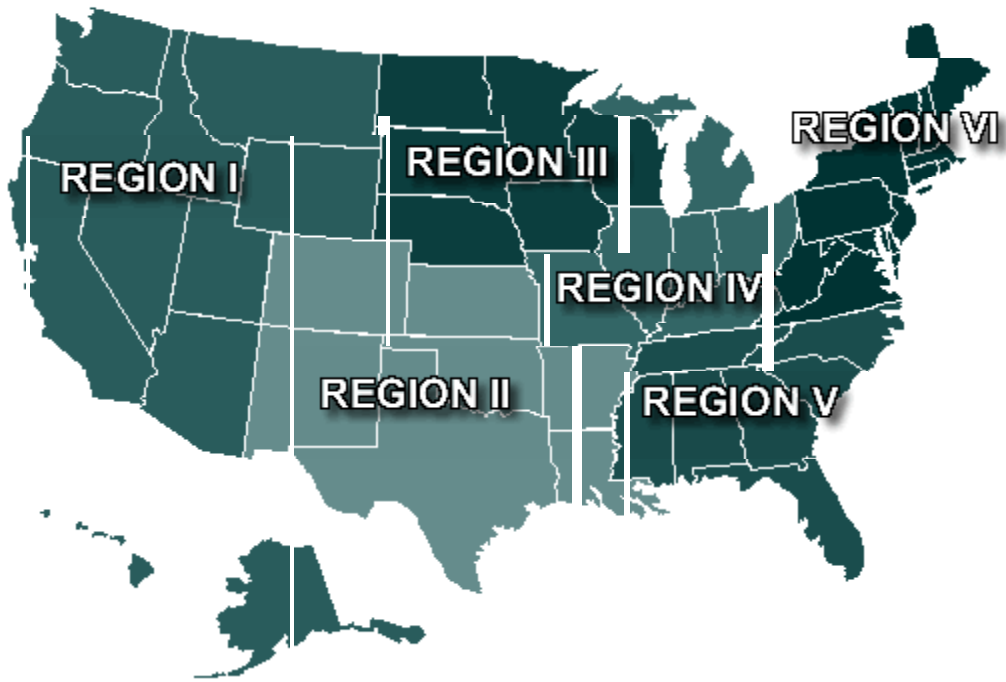
Normal Q-Q Plot of Age



Appendix S

NAAE Regions

NAAE Regions



Appendix T

Specific State Demographics for Participants

<i>Specific State Demographics for Participants (n=533)</i>										
State	<i>f</i>	%		State	<i>f</i>	%		State	<i>f</i>	%
AL	8	1.5%		LA	8	1.5%		OH	21	3.9%
AK	1	0.2%		ME	2	0.4%		OK	16	3.0%
AZ	9	1.7%		MD	5	0.9%		OR	8	1.5%
AR	9	1.7%		MA	1	0.2%		PA	13	2.4%
CA	20	3.8%		MI	6	1.1%		RI	4	0.8%
CO	3	0.6%		MN	14	2.6%		SC	10	1.9%
CT	6	1.1%		MS	12	2.3%		SD	8	1.5%
DE	4	0.8%		MO	27	5.1%		TN	14	2.6%
FL	11	2.1%		MT	8	1.5%		TX	65	12.2%
GA	11	2.1%		NE	7	1.3%		UT	5	0.9%
HI	1	0.2%		NV	3	0.6%		VT	5	0.9%
ID	9	1.7%		NH	7	1.3%		VA	12	2.3%
IL	17	3.2%		NJ	5	0.9%		WA	3	0.6%
IN	8	1.5%		NM	21	3.9%		WV	4	0.8%
IA	9	1.7%		NY	15	2.8%		WI	27	5.1%
KS	13	2.4%		NC	16	3.0%		WY	2	0.4%
Kentucky	17	3.2%		ND	3	0.6%				

VITA

David Charles Frazier was born April 27, 1967 in Friona, Texas. After earning a high school diploma from Melrose High School in Melrose, New Mexico, David earned the following degrees: Bachelor of Science in Agricultural Education from Texas Tech University (1991); Master's of Science in Agricultural Education from Texas Tech University (1997); and Doctorate of Philosophy in Agricultural Education from the University of Missouri (2009). David served as agricultural science teacher at Snyder High School in Snyder, Texas for 15 years (1991-2006). He will begin employment with Tennessee Tech University as Assistant Professor of Agricultural Education on August 1, 2009.

RESEARCH CONFERENCE PAPERS AND PRESENTATIONS

Frazier, D. C., Garton, B. L., & Lacy, J. L. (2007). The Contribution of the Teaching Internship in Developing Interns' Proficiency on State Teacher Certification Standards. *Proceedings of the 5th Annual AAAE North Central Region Research Conference*. Columbia, MO

Frazier, D. C. & Garton, B. L. (2008). Teacher Certification Requirements: Predictive of Teaching Interns' Performance? Annual AAAE National Conference, Reno, NV.

REFEREED POSTERS PRESENTATIONS

Frazier, D. C. & Garton, B.L. (2008). The Relationship between college of agriculture students' self-perceived interpersonal communication styles and verbal communication skills. 2008 AAAE North Central Regional Conference. Ithica, NY. Received the Research Poster Presentation – 2nd Runner-up

Lawver, R. G., Lambert, M. D., Frazier, D. C., Strid, M., & Garton, B.L. (2008). Using podcasts as an instructional tool in verbal communications: Interactivity, connectivity and processing. *Proceedings of the 35th AAAE National Research Conference*, Reno, NV.

Frazier, D. C. & Garton, B.L. (2009). The Relationship between college of agriculture students' self-perceived interpersonal communication styles and verbal communication skills. 2009 AAAE National Conference. Nashville, TN.

OTHER PUBLICATIONS

Frazier, D. C. (1999). Developing strong SAE's. *Making a Difference*, 7(9), 12-13.

Frazier, D.C. (2008). Teaching with the four D's of appreciative inquiry. *The Agricultural Education Magazine*, 80(6), 13-14.