The Relationship between CTE Administrators’ Leadership Self-efficacy and their Capability to Evaluate the Quality of a Secondary Agricultural Education Program in Arizona

THESIS

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ABSTRACT

The typical Career and Technical Education (CTE) Administrator provides the leadership and overall administration necessary to ensure the provision of the best possible education opportunities for all students within his or her school district. The purpose of this study was to explore and describe the leadership self-efficacy among Arizona CTE Administrators' in terms of their capability to evaluate the high quality of secondary agricultural education programs in accordance with the National Quality Program Standards (NQPS). In addition, the study sought to determine the perceptions of Arizona CTE Administrators regarding their capability to evaluate the most important elements of a high quality agricultural education program. An electronically mailed questionnaire generated a 75% response rate (n = 45). Arizona CTE Administrators who oversee agricultural education programs within their districts reported a mean level of importance at 6.75 (SD = 1.5) and a mean level of capability of 6.74 (SD = 1.1) on an eight-point, Likert-type scale. There is a low association between both years in current position and importance and capability of high quality agricultural education programs but a high correlation between the subjects CTE Administrators taught and the perceptions of the importance and capability of assessing the quality of agricultural education programs. The NQPS used in this study are familiar standards to former agricultural education teachers and therefore, it is reasonable that former teachers of agricultural education would perceive themselves as more capable and identify the importance of the standards at a higher value than former teachers of other subjects. However, it is necessary for the stakeholders of Arizona agricultural education to understand all Arizona CTE administrators’ perceptions and attitudes toward high quality agricultural education programs.
Dedicated to the most shining example of an efficacious leader, my husband, whose love and support allows me to walk my own winding path.
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CHAPTER 1: BACKGROUND AND SETTING

William Ellery Channing wrote, “It is not the quantity but the quality of knowledge which determines the mind's dignity” (Channing, n.d.). Quality is a catchphrase in business and industry (Chatterjee & Yilmaz, 1993) and is fairly easy to determine by judging an end product. Quality guru, W. Edwards Deming’s approach to creating high performing organizations was borrowed in the early 1990s as a concept to “renovate education” (Blankstein, 2004, p. 38). Total Quality Education (TQE), thought to be the new paradigm for schooling, made its entrance and exit in the 1990s because as Deming said, “You can’t manage quality – quality is an output” (Blankstein, 2004). Nonetheless, the business community is demanding high quality workers and this requirement continues to drive education reform. Higher standards and quality content standards for all students offers an opportunity for agricultural education to refocus by providing meaningful, relevant programs (Chason & Hutchinson, 2009).

If quality is an output, what is the output in education and what core processes are needed to produce that output? The output of a high quality education may produce problem-solving skills, teamwork, and organization. The output may be the long-standing conviction of increasing academic behavior such as correct answers (Birnbrauer, Wolf, Kidder, & Tague, 1965) and grades (Wolf, Giles, & Hall, 1968). The output may also be the student and what he or she does with their life. Whatever the product, quality matters because the quality of education plays a major role in student learning (Quality Education Equals Exceptional Student Education, 2008) and student learning is the ostensible purpose of ensuring a skilled workforce and an engaged populace to keep our nation, economy, communities, and families robust and prolific (Brand, 2008).
After reviewing existing evidence, Hanushek and Wößmann (2007), concluded in a Policy Research Working Paper, that educational quality is the key issue when measuring the knowledge that students gain represented in tests of cognitive skills. Education quality in other countries is considerably more important for economic growth than simply the quantity of education (Hanushek & Wößmann, 2007). However, educational quality is often sacrificed when other priorities take precedence. At a time when Arizona ranks low in national educational investment surveys, (National Education Association, 2010) educational quality must improve.

The need to address high school dropout rates, improve young peoples’ chances of postsecondary success, and offer students a variety of learning opportunities while education budgets continue to diminish is daunting. The Arizona Education Network reported that Governor Brewer proposed $842 million in budget cuts across state agencies for the 2011-2012 fiscal year while the Senate Republicans’ proposed an additional $400 million in cuts (Arizona Education Network, 2011, para. 2). The Arizona Republic reported that Governor Brewer had proposed additional cuts to K-12 of $82 million as state legislators worked on the fiscal 2013 budget (Pitzl, 2012, para. 11).

For millions of American workers to obtain middle class status, and for American businesses to stay competitive in a new economic era, public schools need to teach a far wider range of students to a high standard (Newsweek, 2008). Educational quality cannot be overlooked in lieu of educational funding. However, as Arizona continues to see decreased financial support for education, every cent is becoming more and more significant. Federal funding, often attached to policies such as Goals 2000 introduced by the Clinton Administration to the No Child Left Behind (NCLB) Act signed by President Bush in 2001, is considered critical in keeping school doors open.
While NCLB is not statistically feasible (Elliot, 2006), funding, in the several billions of dollars leaves most schools beholden. In a 2006 Association for Career and Technical Education Research (ACTER) address, then president, Jack Elliot noted that No Child Left Behind has school districts across the country narrowing their educational delivery methods. Schools are replacing Career and Technical Education (CTE) classes with remedial education classes with not one positive effect on learning and retention found in 144 studies that evaluated remedial education efforts (Elliot, 2006).

In Arizona, as well as across the nation, all school personnel, from secretaries to teachers are seeing increased workloads in an effort to stretch budgets (Committee for Education Funding, 2010). The Committee for Education Funding included a survey by the Association for Career and Technical Education. According to the survey, 64 percent of respondents said their budgets had been cut in the past two years, with 92 percent not expecting any increase next year (Committee for Education Funding, 2010). The changing environment requires not only the traditional leadership and management responsibilities of teachers and administrators but several additional responsibilities. CTE is uniquely situated to enact high school reform and workforce human capital initiatives because learning is often project or outcome based using technology and performance innovation (Harkins, 2002; Vandervoort, 2010). Because CTE is continuously innovating to match workplace demands, CTE is ideally positioned to lead the rest of education (Harkins, 2002) today and into tomorrow, but this requires an adequate number of CTE leaders, of which there is a dearth in the industry (Zirkle, Parker & McCaslin, 2005).

The leadership role CTE administrators perform is instrumental in helping students prepare for success by connecting their learning in high-quality programs to a real-world workplace (Reese, 2002). CTE leaders must now lead change, be an instructional leader,
manage multiple priorities, manage in a political environment, be sensitive to diverse cultures, bridge education with business and industry, work collaboratively within and outside the organization, advocate for CTE in addition to doing more with less (Kister, 2001). Leadership is needed to help refocus the educational enterprise toward improved educational experiences for all students (Stewart & Bristow, 1995). One of the key responsibilities of CTE leaders is the installation and support or continued support of high-quality, nationally certified CTE programs which advance business and industry partnerships, provide opportunities for alternative and continued funding, and promote high-interest contextual learning that prepares students for the increasingly specialized and skilled careers that are current and in demand (Vandervoort, 2010).

Knowing what constitutes a high-quality program according to the Arizona Department of Education, and the ability to reinforce as well as enforce state mandates to ensure funding requires strong leadership. Strong leadership at the state as well as local levels helps provide continued direction and encouragement for school restructuring (Stewart & Bristow, 1995). Outdated CTE programs that lack academic rigor and relevance to the labor market should be identified for remediation (Brand, 2008) or discontinuation. Not only does the education level of citizens and how well they are prepared for the labor market have a direct relationship on economic vitality, but research shows the current K-14 public school system is inadequately meeting the needs of a majority of students (Stewart & Bristow, 1995) making quality CTE programs more consequential. Agricultural education, one of the oldest CTE offerings, has continued the prevailing philosophy of both hands-on and minds-on experiential learning that is rich in opportunities for problem solving delivered through the many authentic contexts comprising the agricultural, food, and natural resources system (Parr & Edwards, 2004).
Agricultural education groups have been and continue to be pro-active in offering the best research-driven training to promote high-quality programs. Over the past 20 years, agricultural education individuals and programs have attempted to organize and mobilize support for national standards (Conroy & Kelsey, 2000). Educational leaders and administrators have the opportunity to ensure agricultural education students are exposed to rigorous CTE coursework that has application in the real world and is linked to labor market demand through ensuring development of high quality programs.

As states continue to suffer huge budget deficits, education will likely continue to see funding dwindle. In a speech to the American Enterprise Institute, U.S. Education Secretary, Arne Duncan stated that preschool, K-12 public school system, and postsecondary educators will need to be inventive and brave in altering the way education systems have worked in the past (Duncan, 2010). Duncan went on to state that this is a time to start treating educational productivity as an opportunity for innovation and accelerating progress. Education increases the human capital inherent in the labor force, which increases labor productivity and thus transitional growth toward a higher equilibrium level of output (Hanushek & Wößmann, 2007).

CTE teachers are leaders in delivering the premier educational delivery system (Elliot, 2007). While education policymakers work to balance school reform with ensuring a well-educated, skilled workforce, CTE continues its long history of engaging students in learning, as these programs prepare students for postsecondary education, the job market, and the 21st century (Brand, 2008).

**Statement of the Problem**

Educational quality – measured by what people know – has powerful effects on individual earnings, on the distribution of income, and on economic growth (Hanushek &
Wößmann, 2007). CTE is poised to be the best or premier educational delivery system in the country (Elliot, 2007). Excellent programs need to be sustained and built upon. Some programs warrant in-depth study and replication as model programs. Those that do not meet educational needs should be upgraded, consolidated, or, as a last resort, phased out (National Academy of Sciences, 1988).

Educational quality has different meanings to different people, and because CTE leaders are tasked with articulating and coordinating CTE programs, the profession of agricultural education must understand CTE Administrators’ perceptions of and attitudes toward what constitutes a high quality agricultural education program in Arizona.

**Purpose of the Study**

The purpose of the study was to describe the leadership self-efficacy among Arizona CTE administrators' in terms of their capability to evaluate the quality of a secondary agricultural education program. Furthermore, the study sought to determine the perceptions of CTE administrators regarding important elements of a high quality agricultural education program. To guide the study, the following research objectives were developed.

**Research Objectives**

1. Describe characteristics of Arizona CTE administrators in terms of age; sex; level of education; years as a CTE administrator; subjects taught; tenure in education status; certification(s) and specific training(s); district size; and number of subordinates.

2. Describe Arizona CTE administrators’ perceptions of their leadership self-efficacy in their capability to evaluate the quality of an agricultural education program.

3. Describe Arizona CTE administrators’ perceptions of their leadership self-efficacy in determining important elements of a high quality agricultural education program.
4. Describe the relationship between number of years as a CTE administrator and CTE administrators’ perceptions of their capability to evaluate the quality of an agricultural education program.

5. Describe the relationship between number of years as a CTE administrator and CTE administrators’ perceptions of important elements of a high quality agricultural education program.

6. Describe the relationship between CTE administrators’ subject(s) taught and CTE Administrators’ perceptions of their capability to evaluate the quality of an agricultural education program.

7. Describe the relationship between CTE administrators’ subject(s) taught and CTE administrators’ perceptions of important elements of a high quality agricultural education program.

**Significance of the Study**

Every year, new organizations, associations and businesses reiterate the value of CTE as they search for qualified candidates to fill positions in the workforce (Melott, 2010; Zirkle, Parker & McCaslin, 2005; Chason & Hutchinson, 2009). Many applicants come directly from secondary schools with a high quality agricultural education program. Over 800,000 students participate in formal agricultural education instructional programs offered in grades seven to adult education throughout the 50 states and three U. S. territories (National FFA Organization, 2011). For these programs to become more academically rigorous and strengthen the connection to postsecondary education and the labor market (Brand, 2008), the role of CTE leadership and the capability to impose high quality programs with sound content standards mandates the accountability for which education reform is calling.
Quality content standards help students better understand the connection between agricultural education and the sciences, mathematics, social studies, English, language arts, world languages, and the arts as National Quality Content Standards for agricultural education standards crosswalks show (Chason & Hutchinson, 2009). Program viability and sustainability requires that Arizona agricultural education stakeholders understand Arizona CTE administrators perceptions toward quality programs. In addition, stakeholders should know CTE administrators’ abilities to evaluate the quality and important elements of high quality within these programs.

According to Zirkle, Parker, and McCaslin (2005), CTE leaders must be able to identify the need of individuals involved in CTE to ensure the development of quality programs. With Arizona estimated to have received $24,786,970 from the Perkins Basic State Grant and $1,880,272 from Tech Prep in fiscal year 2008 (Arizona CTE State Profile, retrieved 2011), CTE is in the position to make substantial differences in education.

**Definitions of Terms**

The following terms will be used throughout the research study. Becoming familiar with these terms is essential to understanding this study.

**Career and Technical Education.** Career and Technical Education is a broad system that encompasses a variety of challenging fields in diverse subject areas which are constantly evolving due to the changing global economy (Association for Career and Technical Education, 2011).

**High Quality Career and Technical Education Programs.** Enhanced academics married with applied learning, connections to career pathways and the labor market, opportunities to develop 21st Century and employability skills, exposure to work and mentoring
from employers, and opportunities to connect to education (American Youth Policy Forum, 2008).

**Agricultural education program.** A systematic program of instruction available to students desiring to learn about the science, business, technology of plant and animal production and/or about the environmental and natural resources systems. It is comprised of three components: classroom and laboratory instruction; the leadership and personal development component taught through the Career and Technical Student Organization, FFA; and the hands-on, and real-world experience component taught through a Supervised Agricultural Experience (SAE) (Dailey, Conroy, & Shelly-Tobert, 2001).

**Self-efficacy.** Refers to an individual's beliefs regarding their ability to produce designated levels of performance that result in influencing events that affect or impact their lives (Bandura, 1997).

**Leadership self-efficacy.** Leadership self-efficacy is a person's judgment that he or she can successfully exert leadership by setting a direction for the work group, building relationships with followers in order to gain their commitment to change goals, and working with them to overcome obstacles to change (Paglis and Green, 2002)

**Standard or Standard statement.** A descriptive statement established and used as a model of quantitative characteristics for the development, management and assessment of secondary (Grades 9-12) agricultural education programs (National Program Standards for Secondary Agricultural Education, 2006).

**Career and Technical Education Administrator.** The person in charge of planning, organizing, directing, controlling, and coordinating the CTE programs within the local secondary career and technical center is the CTE administrator. The CTE Administrator has the authority in
the administrative chain of command equal with school principals (Saucier, 2004). Also referred to as the Career and Technical Education Director in some Arizona Local Education Agencies (LEAs).

**Arizona CTE Program.** Arizona includes 36 specific programs and two emerging programs as listed on the FY 2012 CTE Program List, and must contain the recommended sequence of courses and all essential elements. The program must deliver all state-designated program standards for that program and must be directly related to preparing individuals for employment in an occupation or a pathway to postsecondary education (http://www.azed.gov/career-technical-education).

**Limitations of the Study**

The study was limited to Arizona CTE administrators at secondary schools with an agricultural education program. The sample size is relatively small as each district in Arizona typically has one CTE Administrator. Self-reported data are limited by the fact that they rarely can be independently verified and must be taken at face value. Bias may exist where: (1) selective memory occurs; (2) attributing positive events and outcomes to one's own agency but attributing negative events and outcomes to external forces; and, (3) possibly representing outcomes or embellishing events as more significant than is actually suggested from other data (Ary, Jacobs, Razavieh, Sorensen, 2006, p. 507).

**Basic Assumptions**

Due to the nature of this study, the investigator made several assumptions. These assumptions were:

1. All CTE administrators will report their data in the same format and that the data will be accurate and complete.
2. All CTE administrators will respond truthfully to the administered questionnaire.

3. All CTE administrators will have a basic knowledge of the construct of self-efficacy and the components of a high quality agricultural education program.

CHAPTER 2: REVIEW OF RELATED LITERATURE

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3. Describe Arizona CTE administrators’ perceptions of their leadership self-efficacy in determining important elements of a high quality agricultural education program.

4. Describe the relationship between number of years as a CTE administrator and CTE administrators’ perceptions of their capability to evaluate the quality of an agricultural education program.
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**Literature Review**

The review of related literature was conducted to establish a theoretical foundation for the current study and contains six sections. The first section describes self-efficacy, administrator-efficacy, and leadership self-efficacy. The second section describes current CTE leadership and funding. The third section describes high quality education and the National Quality Program Standards. The fourth section describes agricultural education programs and the role this specific CTE program plays in higher quality and leadership.

**Self-efficacy.** Efficacy, or one’s capacity to produce certain results has been extended to include self-efficacy (Bandura, 1977) and more recently, teacher and leadership self-efficacy (Paglis & Green, 2002) or leadership efficacy (Hannah, Avolio, Luthans & Harms, 2008). With a foundation in social cognitive theory, efficacy assumes that people are capable of human agency or intentional pursuit of courses of action and that such agency operates in a process called triadic reciprocal causation. Bandura’s model of reciprocal causation states that behavior, cognition, and other personal factors, and environmental influences all operate as interacting
determinants that influence each other bidirectionally but not necessarily equally (Bandura, 1989).

A strong sense of efficacy can boost human accomplishment and personal well-being in many ways (Bandura, 1994). Perceived self-efficacy is concerned with judgments of personal capability. For CTE administrators, similar to what so much research indicates for teachers, a strong sense of efficacy can be a matter of long-term commitment in the career or short-term burn-out. People acquire self-efficacy beliefs from past performance, vicarious experiences, verbal persuasion, and physiological cues (Bandura, 1977).

Positive or successful past performances may be the strongest contributor to high confidence and self-efficacy. If one has been successful at a skill in the past, they typically believe they will be successful at the skill in the future. Self-efficacy influences and is influenced by performance experiences. Past performance or memory performance is more strongly related to concurrent memory self-efficacy (perceived current ability to perform a given task) than it is to global memory self-efficacy or the perceived usual memory ability in general (Beaudoin & Desrichard, 2011). Beudoin and Desrichard’s (2011) research found that there is a higher correlation between memory self-efficacy and memory performance when the situation uses familiar stimuli (Beaudoin & Desrichard, 2011). Conversely, successive poor performance or outcomes in the past can negatively affect ones confidence and self-efficacy. Unfortunately, those who possess a low sense of efficacy often demean their successes and will regularly continue to doubt their effectiveness even after many successes (Pajares, 2002). A low self-esteem individual may have high-efficacy for a given task even though Bandura (1986) stated that “judgments of self-worth and of self-capability have no uniform relation” (p. 410).
Vicarious experiences or watching others perform can also have a strong influence on self-efficacy. Therefore, highly efficacious mentors can have significant influence on those they mentor. When a person sees another person accomplish a task, especially if the person is deemed somewhat like themselves, individuals make judgments about their own capabilities. Unlike the self-efficacy beliefs resulting from past experience, self-efficacy beliefs gleaned through observation are less stable. Once strong self-efficacy is developed from one's own personal successes, an occasional failure may not have negative effects; however, self-efficacy based on observing others success will diminish rapidly if observers subsequently have unsuccessful experiences of their own (Pajares, 2002). Self-modeling or observing oneself succeed, is also a powerful influence. Watching recordings or viewing photographs of successful performances and accomplishments can increase confidence.

Although verbal persuasion such as encouragement can increase self-efficacy, it does not contribute as much as an individual’s own experiences. The encouragement and persuasion need to be attached to actual successes. The short-term effects of verbal persuasion also must come from someone with credibility if one is expected to believe in one’s capabilities. Praise for intelligence can undermine motivation and performance according to Mueller and Dweck (1998) and have more negative consequences for achievement motivation than praise for effort.

The final and weakest source upon which self-efficacy beliefs are based are physiological cues. Sweaty palms or a dry mouth are often interpreted as signs of nervousness people rely on in judging their anxiety and vulnerability to a situation. Some reactions can be debilitating. People use this information to judge their level of self-efficacy; and perceived self-efficacy can be a better predictor of behavior toward unfamiliar threats than past performance (Bandura, 1977).
Empirical research continues to associate positive teaching behaviors and high levels of student achievement can be obtained from teachers with high self-efficacy (Wolf, Foster, & Birkenholz, 2009). A smaller amount of information exists on the use of the self-efficacy construct to understand behaviors of school administrators (McCollum, Kajs & Minter, 2005). However, there is research showing that school principals’ leadership role is vital in effectively preparing students (Barth, 2001; Lunenburg & Ornstein, 2004); and measuring instruments designed to target the efficacy of school administrators are being developed (McCollum, Kajs & Minter, 2005). In addition, supportive findings in leadership research indicated that managers with high leadership self-efficacy are more effective in leadership attempts, commitment and overcoming obstacles (Paglis & Green, 2002). Equally important to note, a school climate conducive to strong academic emphasis and a school leader with influence willing to use it on behalf of the teaching staff can aid in the development of teachers’ beliefs that they can influence student learning (Hoy & Woolfolk, 1993).

Also of concern to educational leaders is group efficacy; the group’s collective estimate of its ability to perform a task has strong links between group efficacy and the group performance (Gibson, 1999). Low efficacy groups believe they are not capable of causing things to happen whereas groups with a high efficacy work well together and believe they can accomplish goals through positive creativity if necessary.

**Administrator efficacy.** While a large amount of literature is devoted to teacher-efficacy (Bandura, 1997; Stripling, Rickets, Roberts & Harlin, 2008; Tschannen-Moran & Hoy, 2001; Wolf, Foster & Birkenholz, 2009), relatively little has focused on school administrators, especially CTE administrators. According to McCollum and Kajs (2007), three vital characteristics school administrators’ need to have is current knowledge, relevant skills, and self-
efficacy. The level of self-efficacy or the confidence to handle the demands of a school administrator makes a difference in how diverse administrators will undertake the demands of the job (McCollum & Kajs, 2007). The interaction of behavior, environment, and personal factors is referred to as reciprocal determinism (Bandura, 1986; Pajares, 2002) and as active agents, administrators can control much of their environment, their beliefs, as well as their behavior. People are not just products of their circumstances but are contributors to their circumstances (Bandura, 2006). An administrator confident in his or her teaching and leadership ability will anticipate successful results from his or her instructional leadership while the converse is true for an administrator lacking confidence (McCollum & Kajs, 2007). For years, teachers and principals were asked to manage the academic processes as policymakers and society demanded renovation of the current public education system. Managers manage; leaders are required to learn and develop multiple skills and abilities to be effective (Dragoni, Tesluk, Russell, & Oh, 2009) in a fluctuating, reform-driven educational system.

Knowledgeable school leaders who are experts in teaching and learning are critical to student achievement, but these individuals are often overwhelmed by the management responsibilities of administering (Jones, 2007). School budgets, increasing diversity, teacher attrition, compliance with regulations and policies, community collaboration, in addition to a highly dynamic atmosphere and increasing responsibilities suggests CTE administrators must become efficacious leaders willing to develop and delegate to their staff as well as to their district CTE educators. Belief in the ability to effect change allows one the confidence, perseverance and resourcefulness in finding ways to positively impact their situation (Bandura, 1993). McCollum and Kajs questioned that, “Given the recent changes in the role definition and preparation, especially as an instructional leader, a school administrator’s level of self-efficacy
should receive more attention toward effectively carrying out leadership responsibilities” (p. 136). The considerable emphasis on data-driven decision making and the focus on test scores leave the group most attributable to improving student achievement apathetic (Hunter, 2007). Teachers are regarded as the fulcrum and their collective efficacy in a given school can make an educational difference to their students over and above the educational impact of outside sources (Tschannen-Moran & Barr, 2004). Administrators and teachers should work together to enhance the leadership abilities of both because school administrators cannot improve schools without increasing teacher leadership (Hunter, 2007).

**Leadership self-efficacy.** As education reforms ensue, the concern that career and technical education would not have enough leaders to meet the need in the field has existed since the early 1990s (McMurtry, 2007). Zirkle, Parker, and McCaslin called the preparation and development of high-quality leaders for CTE an urgent need (2005). School leaders serve an important role in developing high-performing schools but the research on what knowledge, skills, and abilities they need to be successful is not well developed (Grissom & Harrington, 2010) and provides little guidance on strategies for strengthening and supporting this important role (Brown et al., 2001 as cited in Grissom & Harrington, 2010). The current economic situation requires leaders quick adaptation to accelerating rates of change both in their internal and external environments (Hannah et al., 2008). Leadership is obvious and often more audible in business and industry where great companies with excellent leaders survive and poorly run companies with corrupt or weak leaders disintegrate. However, education is in no less a better situation. Now, more than ever, education will require excellence from its entire workforce as schools require faculty transition from managers to leaders.
Leaders must be able to continually meet complex challenges and possess the agency required in order to positively influence their followers as well as the organization’s culture, climate, and performance (Hannah et al., 2008). Leaders will need to lead at all levels, as Warren Bennis stated, “…we tend to forget that leadership often involves acting as if one were a leader” (Bennis, 2007, p. 4) and not necessarily because a leadership title has been given. Also a challenge is that principals seem reluctant to extend genuine influence to teachers and parents, possibly because they may not feel these groups have the expertise required to make decisions or contributions in the best interest of the school (Tschannen-Moran, 2000). However, Tschannen-Moran (2000) concluded that school leaders who collaborate with colleagues make higher quality decisions as they make use of the knowledge and expertise of the talent within schools.

Because education has to do more with less, leaders must also exhibit integrity, creativity, a vision, and the consensus of followers. Unfortunately, integrity, creativity, a vision and followers are not all the qualities for all situations. Research on leadership over the years, literally thousands of empirical analyses (Grissom & Harrington, 2010; Hannah et al., 2008; Hallinger, 2008; McMurtry, 2007; Paglis & Green, 2002; Thoonen, Sleegers, Oort, Peetsma, & Geijsel, 2011; Zirkle, Parker, & McCaslin, 2005), yielded no clear explicit understanding as to what differentiates leaders from non-leaders (Paglis & Green, 2002). Even psychologists have not sorted out which traits define leaders or whether leadership exists outside of specific situations (Bennis, 2007). Recent theory and research on leadership indicates that leadership is always, in some sense, a matter of values (Bennis, 2007). Unfortunately, bad leadership is obvious and given more press than it deserves, but excellent, effective leadership examples are not as promulgated and definitions vary amongst authors and researchers.
As efforts continue to assist in understanding leadership, research in education pursues avenues of instructional leadership, distributed leadership, and leadership self-efficacy (among others) to intentionally and systematically improve student learning. Leadership self-efficacy refers to one’s perception regarding his or her general capabilities to lead (Murphy, 1992). Murphy (1992) developed The Self-Efficacy for Leadership (SEL) measure in an effort to measure individuals’ efficacy in their general leadership abilities. Paglis and Green (2002) developed and tested a leadership model on managers' motivation for attempting the leadership of change. Their study defined leadership self-efficacy (LSE) as a construct; and a measure based on social cognitive theory, made up of three dimensions was developed: direction-setting, gaining followers' commitment and overcoming obstacles to change. Consistent with self-efficacy theory, Paglis and Green (2002) found that industry managers with high leadership self-efficacy would pursue a greater number of leadership attempts as compared with managers who exhibit self-doubting behavior.

Based on the review of literature related to the study of leadership self-efficacy by Paglis and Green (2002), the author used the framework in Figure 1 to guide this study of determining leadership self-efficacy among Arizona CTE administrators in their capability to determine quality agricultural education programs. CTE leaders must successfully exert leadership by setting a direction for the work group, build relationships with followers in order to gain their commitment and work with them to overcome obstacles (Paglis & Green, 2002).
Developed and tested by Laura Paglis and Stephen Green (2002), the above model focuses on a managers’ motivation in attempting leadership of change. Zirkle et al. (2005) stated, “CTE is facing a rapidly changing external and internal environment” (p. 66). Traditional leadership and management roles in CTE are changing and CTE leaders must be able to lead that change (Kister, 2001). Paglis and Green (2002) determined the definition of LSE as “a person’s judgment that he or she can successfully exert leadership by setting a direction for the work group, building relationships with followers in order to gain their commitment to change goals, and working with them to overcome obstacles to change” (p.217). Paglis and Green (2002) determined that the model’s center (direction-setting, gaining commitment and, overcoming obstacles) is the LSE construct which represents a manager’s self-perceived capability for
general leadership tasks. The four antecedents on the left of Figure 1 (individual, subordinate, supervisor and organizational) represent important influences on mangers’ LSE judgments. “Managers’ organizational commitment and perceptions of crisis are included as potential moderators of the relationship between LSE and leadership attempts” (p. 218). Paglis and Green based their primary hypothesis on Bandura’s (1986) social cognitive theory “that high LSE managers will be seen by direct reports as engaging in more leadership attempts” (p. 215). Positive relationships were found between the first two dimensions of LSE and leadership attempts and several positive relationships were found between LSE dimensions and proposed antecedents, including self-esteem, subordinates’ performance abilities and managers’ job autonomy (Paglis & Green, 2002).

In a 1995 study, Hipp and Bredeson published an article that examined the connections between school teachers’ self-efficacy and school principal’s leadership behaviors using a relatively small sample size (Hipp & Bredeson, 1995). In 2006, Nir and Kranot attempted to reassess Hipp and Bredeson’s findings using a larger sample of schools and a research design that controlled additional variables. Their findings suggested that, “…teachers’ perceived general efficacy is not related to school principal’s leadership style but rather reflects a wider perception that goes beyond the characteristics of organization contexts” (Nir & Kranot, 2006, p. 212). Measurements of self-efficacy have gone through several stages (Nir & Kranot, 1998); it is likely that leadership self-efficacy will do the same.

Recognizing the role school leaders play in ensuring student and teacher success, the Center for the Future of Teaching and Learning has incorporated data on education leadership in an effort to improve schooling for California’s students (School Leadership, 2011). The Center’s first policy forum which included teachers, principals, superintendents, policymakers, and
researchers in the spring of 2010 was to build consensus on what policymakers must know about school site leadership. Much of their effort strives to strengthen teaching quality through effective school site leadership. Country-wide, educators, policymakers, researchers, and concerned citizens discussed the importance of school leaders and what can be done to strengthen and assist them. Federal officials are now accepting that school improvement cannot be successful without effective school leadership (Wallace Foundation conference, 2009).

Consistent with self-efficacy theory, people who stand up and challenge inertia believe in their ability to change the circumstances they may face (Bandura, 1977, 1986; Kouzes & Posner, 2007). Leaders deal with unprecedented challenges in today’s climate as all organizations must struggle to adapt to ever-accelerating rates of change both internally and with the external environment in which they are embedded (Hannah et al., 2008). Organizations that have the ability to survive are a testament to adaptation and leadership capability. Education and the funding provided is just one area in the current economy that will have to quickly evolve in order to withstand budget shortfalls across the nation.

Circumstances that continue to develop along with educational legislation calls for leaders who stay abreast of all new requirements for accountability as well as quality. Zirkle et al. (2005) defined CTE leaders as, “those who can earn the respect of individuals, stress obtaining higher core indicators of performance to assess CTE program effectiveness and improve the secondary and postsecondary outcomes of students who pursue CTE, act with honesty and integrity and extend CTE thinking beyond the status quo” (p. 66). CTE leadership is essential in providing support to not only the teachers and students but to school administration as well. Leaders who are confident and constructive deem their capability to lead change with assurance; are seen by others at work as initiating more change efforts; and are able to persist
longer at realizing their change goals even in the face of diversity then those with low self-efficacy (Paglis & Green, 2002).

CTE administrators work with state agencies to link education with workforce and economic development (Erickson, 2003); ensure accountability for academic and CTE achievement under the various funding requirements, in addition to the specialized delivery system (Clark & McCharen, 2011) for which there are no systems for certification of CTE administrators different than that of public school administrators (Clark & McCharen). CTE leaders manage multiple priorities (Clark & McCharen presentation ACTER, 2011), some are also teachers, principals and have other school administrative responsibilities making it difficult to effectively spread their time and resources. CTE leader attrition is exacerbated by the shortage of CTE leaders being prepared. This shortage has taken on new urgency (Zirkle, Parker, & McCaslin, 2005) requiring new strategies for meeting funding, accountability, and quality of delivery goals.

Leaders with a strong sense of leadership self-efficacy are more likely to bring about growth and engagement in challenges in those they lead (Hannah et al., 2008) thus distributing much of the workload. The construct of leadership self-efficacy (LSE) is defined using three dimensions: direction-setting, gaining followers’ commitment, and overcoming obstacles to change (Paglis & Green, 2002). If, as Bandura (1997) stated, efficacy is the most pervasive among the mechanisms of agency to providing a foundation for all other facets of agency to operate, then leadership self-efficacy of CTE administrators is useful to know in the ongoing effort to produce desired performance outcomes. Leadership self-efficacy may also prolong the tenure of the already sparse CTE leadership which was, according to Kister (2001) approximately three years.
Zirkle, Parker, and McCaslin (2006) described CTE leaders as those who earn the respect of individuals, stress obtaining higher core indicators of performance to assess CTE effectiveness, improve outcomes of postsecondary students, are honest and act with integrity, and can extend CTE thinking beyond the current mindset. In a review of leadership efficacy with an eye toward future directions, Hannah et al (2008) proposed expanding the current domain of leadership efficacy to include leader, follower, and collective efficacies.

…when leaders and followers share a positive view of their abilities to constructively influence each other, and then support each other and perform well, we suggest that unique organizational cultures may emerge where these contextual factors not only shape leadership efficacy, but will also be impacted by leadership efficacy over time (p. 2).

**Career and Technical Education Leadership.** According to the Bureau of Labor Statistics, the success of an educational institution depends on competent administrators who provide instructional leadership and manage the day-to-day activities in schools, preschools, day care centers, and colleges and universities. Administrators in school district central offices oversee public schools under their jurisdiction. This group of administrators includes those who direct subject-area programs such as English, music, career and technical education, special education, and mathematics. They supervise instructional coordinators and curriculum specialists and work with them to evaluate curricula and teaching techniques and to develop programs and strategies to improve them.

Education administrators set educational standards and goals and establish the policies and procedures required to achieve them. In addition, they supervise managers, support staff, teachers, counselors, librarians,
coaches, and other employees. They develop academic programs, monitor students’ educational progress, train and motivate teachers and other staff, manage career counseling and other student services, administer recordkeeping, prepare budgets, and perform many other duties. They also handle relations with parents, prospective and current students, employers, and the community (Bureau of Labor Statistics, page Elementary, Middle, and High School Principals, 2011).

Education administrators held about 445,400 jobs in 2008 and job opportunities are expected to grow as large numbers of administrators retire and the number of applicants dwindles for some positions (Bureau of Labor Statistics, page Elementary, Middle, and High School Principals, 2011).

In investigating the role of the CTE administrator, these individuals have a number of obligations; however, these vary from district to district, state to state. Essential functions may include, but are not limited to, the following tasks, duties, knowledge, skills and other characteristics. This list is illustrative only and not a comprehensive listing of all functions and tasks performed.

1. Evaluate curricula, teaching methods, and programs to determine their effectiveness, efficiency, and utilization, and to ensure that school activities are aligned with federal, state, and local standards.

2. Recommend personnel actions related to programs and services.

3. Maintains membership in and participates in professional organizations devoted to CTE.

4. Coordinates guidance counselors to increase professional growth, discuss problems, and maintain a consistent counseling approach.
5. Confer with parents and staff to discuss educational activities, policies, and student behavioral or learning problems.

6. Observe teaching methods and examine learning materials to evaluate and standardize curricula and teaching techniques, and to determine areas where improvement is needed.

7. Recruit, hire, train, and evaluate primary and supplemental staff.

8. Prepare, maintain, or oversee the preparation and maintenance of attendance, activity, planning, or personnel reports and records.

9. Plan and lead professional development activities for teachers, administrators, and support staff.

10. Stays current on High School Reform issues on the state and federal levels

11. Meet with federal, state, and local agencies to keep updated on policies and to discuss improvements for education programs.

12. Determine allocations of funds for staff, supplies, materials, and equipment, and authorize purchases.

13. Collaborate with teachers to develop and maintain curriculum standards, develop mission statements, and set performance goals and objectives.

14. Direct and coordinate activities of teachers, administrators, and support staff at schools, public agencies, and institutions.

15. Set educational standards and goals, and help establish policies and procedures to carry them out.

16. Organize and direct committees of specialists, volunteers, and staff to provide technical and advisory assistance for programs.
17. Develop partnerships with businesses, communities, and other organizations to help meet identified educational needs and to provide school-to-work programs.

18. Counsel and provide guidance to students regarding personal, academic, vocational, or behavioral issues.

19. Review and approve new programs, or recommend modifications to existing programs, submitting program proposals for school board approval as necessary.

20. Prepare and submit budget requests and recommendations, or grant proposals to solicit program funding.

21. Review and interpret government codes, and develop programs to ensure adherence to codes and facility safety, security, and maintenance.

22. Establish, coordinate, and oversee particular programs across school districts, such as programs to evaluate student academic achievement.

23. Collect and analyze survey data, regulatory information, and data on demographic and employment trends to forecast enrollment patterns and curriculum change needs.

24. Advocate for new schools to be built, or for existing facilities to be repaired or remodeled.

25. Determine the scope of educational program offerings, and prepare drafts of course schedules and descriptions to estimate staffing and facility requirements.

26. Direct and coordinate school maintenance services and the use of school facilities.

27. Plan and develop instructional methods and content for educational, vocational, or student activity programs.

28. Mentor and support administrative staff members such as superintendents and principals.
29. Write articles, manuals, and other publications, and assist in the distribution of promotional literature about facilities and programs.

30. Teach classes or courses to students.


According to job openings posted on EducationWeek Top School Jobs and ACTE Job Bank for CTE administrators, requirements are usually a Masters degree in education, with a Supervisor certificate issued by the state preferred; and a minimum of three years as an administrator or supervisor in an educational setting. At least three years as a teacher of CTE is also required, or any equivalent combination of experience and education from which comparable knowledge, skills and abilities has been achieved (ACTE JobBank, 2012). Other requirements may include:

- Must be able to pass a fingerprint and background clearance check
- Must be able to obtain and maintain an Arizona driver’s license
- May be required to lift and carry heavy, bulky supplies and materials weighing up to 20 pounds
- May be required to work outside normal working hours
- May be required to travel to perform work functions (Combined from Zirkle et al, (2005); Peoria job code H-9030, (2011); Mymajors.com, (2012); Topschooljobs.com, 2011, 2012).
CTE is experiencing a shortage of leaders, both CTE administrators currently in the profession and those individuals with potential. Schools must find ways to support their development as well as ways to keep them in their organization (Zirkle, Parker & McCaslin, 2005). Decision makers can master effective ways of mobilizing the concerted efforts of committed faculty if they are to exercise control over organizational outcomes (Bandura & Wood, 1989). A school faculty who believe in their combined instructional effectiveness can contribute significantly to their school’s level of academic success (Bandura, 1993).

Finding a common goal or purpose, determining what is meaningful to others, and making it a cause for commitment (Kouzes & Posner, 2007) requires CTE administrators with a high sense of efficacy. The ability to activate efficacy processes may enable CTE administrators to create beneficial environments and to exercise some control over them. However, there is a definite difference between having the knowledge and skills and being able to use them well under adverse conditions. Administrations’ shared vision and efforts toward achieving that common goal must be pervasive throughout the school for individuals to remain task oriented when adverse situations occur. A CTE Administrator with high self-efficacy can be especially successful considering the characteristics of a student body which alone can effectively shift school-level desirable achievement by altering faculties’ beliefs in their shared efficacy (Bandura, 1993).

Administration and faculty with a high sense of efficacy can visualize successful circumstances that provide positive guides and supports for performance. The commitment to overcome negative or demoralizing effects from the student body or faculty beliefs requires a staff that works together with a strong sense of purpose and belief in their capabilities. Both high and low senses of self-efficacy seem to have a trickle down effect. It appears vital that CTE
administrators become highly efficacious in their areas or fields. Unfortunately, it appears that a high sense of efficacy cannot be bestowed or passed on just through examples. CTE administrators must provide several situations and conditions where individuals from teachers to students can experience success.

**Arizona Career and Technical Education Funding.** With the advent of educational reform in the United States, accountability legislation is pervasive at every educational level. Legislation that provides benchmarks that states must meet in order to receive federal funding (Long, 2008). As district, state, and federal policymakers become more and more interested in the connection between education and economic competitiveness, implementation of programs such as state and national standards, high-stakes assessments, as well as schools required to report their progress are being tied to funding (Earle, 2011). Principal leadership in regards to instructional leadership has been the focus of much scholarly work (Hallinger, 2008). Given the development of the CTE administrators role in ensuring high accountability standards and performance measures mandated by Perkins IV and No Child Left Behind legislation are met, CTE administrator leadership role requires attention as well. In Arizona, much of the leadership for CTE programs comes from a CTE administrator.

Ongoing budget shortfalls force “further cutbacks in education and all other services provided by state and local governments” Dean Baker, co-director of the Center for Economic and Policy Research reported (McCarthy, Lee, 2011). The December 2010, report from the American Association of School Administrators states that while national economic indicators demonstrate that the recession ended in July 2009, the reality is that state and local budgets continue to feel the heavy burden of declining revenues and multi-year cuts. As the recession continues and budget cuts carry over from year to year, school districts face increasingly difficult
budgets, ultimately leading to drastic personnel reductions, including hundreds of thousands of teachers across the nation (Brenchley, 2011). Despite small reprieves, most school employees have seen their job responsibilities double or triple or jobs and programs disappear entirely.

Public education, heavily reliant on state and local funding will have a marked increase in future cuts to areas that more directly impact student achievement in an effort to keep their doors open (Ellerson, 2010). “Over the past three fiscal years (2009 through 2011), states closed more than $430 billion in budget shortfalls” (Ellerson, pg. 20). It seems likely that tougher decisions for schools are yet to come.

The Carl D. Perkins Career and Technical Educational Act of 2006 is the principle source of funding for CTE in the United States. Amongst the several reiterations, the purpose of Perkins IV is to develop more fully the academic, career, and technical skills of secondary students and postsecondary students who elect to enroll in CTE programs. “Approved” or “active” descriptors are synonymous and describe programs eligible to participate in State Block Grant and Federal Perkins funding by meeting the following criteria:

1. Delivers a coherent sequence of instruction.
2. Teaches all the State-designated program “standards.”
3. Specified on the current CTE Program List.
4. Taught by an appropriately certified teacher per CTE certification requirements.
5. Evaluates program performance annually and meets or exceeds established State Performance Measures.
6. Offers student work-based participation that involves actual work experience and connects classroom learning to work activities.
8. Requires a Career and Technical Education Student Organization (CTSO) to be organized for the CTE secondary programmatic area (Arizona Department of Education CTE Handbook, pg. 2).

The Perkins Collaborative Resource Network website provides a resource and information sharing portal (Miller, 2012) and gives guidance for the Perkins IV Program of Study requirements to:

- incorporate secondary and postsecondary elements;
- include coherent and rigorous content aligned with challenging academic standards and relevant career and technical contents in a coordinated, non-duplicative progression of courses that align secondary to postsecondary education;
- may include opportunity for secondary education students to gain postsecondary education credits through dual or concurrent enrollment programs or other means;
- lead to an industry-recognized credential or certificate at the postsecondary level or an associate or baccalaureate degree (Perkins Collaborative Resource Network, 2012).

In 2006, then U.S. Secretary of Education Margaret Spellings delivered the following remarks at the school choice forum at the Greater Allen Cathedral in Jamaica, New York:

"It used to be if a parent asked how a school was doing, we couldn't really answer the question. We had almost no data and no benchmarks for success.” She went on to say that, “when we passed our landmark education reform law, the No Child Left Behind Act, four years ago, our first priority was to help states develop strong accountability systems and high standards for all students. We set a historic goal to ensure every child in this country—regardless of race, income, or zip
code—can read and do math on grade level. And we gave ourselves a deadline to do it by 2014 because parents have waited long enough.” According to Spellings, the education reform law was meant to shine the spotlight on how well districts are serving students and parents. “Without NCLB, we wouldn't know which schools are falling short of standards ... we wouldn't know who is eligible for options under the law... and we wouldn't be able to hold school districts accountable when they fail to deliver those options to parents. This law calls on us all to pony up and live up to our responsibilities. And when we don't, there's a day of reckoning. (U.S. Department of Education, Washington, DC. Release date: April 5, 2006).

Almost three years later, Education Secretary Arne Duncan stated in a U.S. News and World Report article that one of the items on his agenda was to fix the Bush Administration's No Child Left Behind law.

I think we are lying to children and families when we tell children that they are meeting standards and, in fact, they are woefully unprepared to be successful in high school and have almost no chance of going to a good university and being successful. (US News and World Report, February 5, 2009).

Focusing on accountability for student achievement and adopting academic standards that are more rigorous and aligned with those of other states, standards aim to articulate core educational values to students across the country. Having the same standards ensures cohesive distribution of knowledge not only from state to state but from school to school. "The idea of 50 states doing their own thing doesn't make sense," Duncan stated, referring to the current patchwork of standards and tests (US News and World Report, February 5, 2009). By March,
2011, Duncan repudiated the idea of core standards across the country, “By mandating and prescribing one-size-fits-all solutions, No Child Left Behind took away the ability of local and state educators to tailor solutions to the unique needs of their students,” Duncan said. His department estimated that four out of five schools in this country will not make their No Child Left Behind benchmarks by the law's target year of 2014 (Holland, CNN, 2011). Education must continue to swing with the pendulum because students and schools that do not meet certain requirements face consequences. Consequences which can include individuals unable to graduate, or sanctions placed on institutions in addition to entire administrative staff replacement (Fletcher, 2006).

Unapproved programs are not eligible for federal or state funding. A CTE program(s) may be unapproved for a variety of reasons:

- The district fails to submit accurate Course Enrollment Verification Reports or submit Participant, Concentrator or Placement Verification Reports.
- The district is still missing one of the essential elements after the one year exemption has been granted.
- The district does not conduct an annual program evaluation, implement an Action Plan or submit the results to Arizona Department of Education at the established deadline.
- The district does not meet the State Adjusted Level of Performance (SALP) or Local Level of Performance (LALP) or fails to implement an Improvement Plan, fails to make any improvement in meeting any of the levels of performance or fails to meet 90 percent of the SALP or LALP for three consecutive years.
• The program fails to produce CTE concentrators for three consecutive years or a placement for four consecutive years (Secondary Guidelines Performance Measures, 2011).

Almost from the beginning of formal teacher education, teacher educators have been concerned about standards for their programs and new teacher candidates, noted by Edelfelt and Raths (1998) in their report examining the history of standards in teacher education. In 1997, The United States Department of Education declared that, “All states and schools will have challenging and clear standards of achievement and accountability for all children, and effective strategies for reaching those standards” (U.S. Department of Education, July, 1997). What are education standards? Both Richardson (1994) and Pearson (1994) referred to the dictionary for definitions:

1. Something that is established by authority, customer, or general consent as a model or example to be followed.

2. A definite level of degree of quality that is proper or adequate for a specific purpose.

How those standards are taught may be determined by each learner in the class as one size does not fit all. Education standards, while periodically revised, continue to be the yardstick by which schools are measured. Having standardized criteria by which to measure program quality should exist as well. High-quality CTE leadership helps ensure high-quality CTE programs.

**High Quality Education and the National Quality Program Standards.** Modern education reforms are increasingly driven by a growing understanding of what works in education and how to go about successfully improving teaching and learning in schools (Barber,
2009). But by the end of the 1980s, large numbers of students continued to perform at low levels prompting policymakers to put pressure on the schools establishing state education standards and national educational goals. The accountability campaign culminated in George W. Bush signing the No Child Left Behind Act in 2002 (Newsweek, 2008). Undoubtedly, there will be more legislation to come as Alan Blankstein (2011) wrote in his book, “Low-level, high-stakes testing is sapping our energy, time, and focus” (p. 7) and proving to be ineffectual. Countries with the highest ranking Program for International Assessment (PISA) scores rarely test at all. They look for quality in teachers, financial and professional support, and training. According to PISA 2009 results, the best performing school systems manage to provide high-quality education to all students. Canada, Finland, Japan, Korea and the partner economies Hong Kong-China and Shanghai-China all performed well above the Organization for Economic Co-operation and Development (OECD) mean performance and students tend to perform well regardless of their own background or the school they attend (OECD, 2010).

There is broad agreement that the key to high student achievement is the quality of teachers (Tucker, 2011). Marc Tucker, President of the National Center on Education and the Economy wrote a commentary on teacher quality in which he described several winning strategies from countries which rank much higher than the United States in international comparisons of student achievement. Among these are: raise the standards of admittance to teacher education institutions; move teacher education to research institutions; insist teachers know their subject; never waive licensure standards; make sure teachers know their craft; compensate teachers well.

High quality teachers may provide a quality education but there is a shortage of high quality teachers due to lack of lifelong career satisfaction; a high number of teacher graduates
who do not take teaching jobs; beginners who take jobs in urban schools but fail or leave; and a greater number of entry level opportunities outside of teaching, to name a few (Haberman, 2005), and until these issues are addressed, quality teacher numbers are most likely to remain low. This may be compounded in this era of ‘blame the teacher.’ The district and local levels compete with state and federal reform directives (Hill-Jackson & Lewis, 2010). At the local level, teaching becomes actualized and entire school districts are facing indecipherable selection methods for quality teachers, ineffective recruiting of quality teachers and quality minority teachers, inadequate teacher induction and mentoring, random professional development experiences, and low retention rates (Hill-Jackson & Lewis, 2010). The prologue of Transforming Teacher Education stated that at the state and federal level, recent policy efforts are overly concerned with testing that have done little or nothing for increasing student achievement in underserved communities and are mismatched to teacher preparedness and learners’ needs (2010).

The key elements of high quality CTE programs are enhanced academics with applied learning, connections to career pathways and the labor market, developing 21st Century and employability skills, exposure to work and mentoring from employers, and opportunities to connect to postsecondary education, are shown to be effective for students (Brand, 2008). Table 1 features the different standards the different educational entities recommend.
Table 1
Program Standards Crosswalk

<table>
<thead>
<tr>
<th>Standards-based curriculum</th>
<th>National Quality Program Standards</th>
<th>ADE CTE</th>
<th>UofA Program Review Guide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curriculum delivered through integrated model (classroom/lab; experiential; and student leadership)</td>
<td>X</td>
<td>X</td>
<td>a)</td>
</tr>
<tr>
<td>Instruction promotes academic achievement &amp; skill development of all student through year-round instruction</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Facilities &amp; equipment support implementation of program &amp; curriculum</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Multiple assessment methods</td>
<td>X</td>
<td>b)</td>
<td>X</td>
</tr>
<tr>
<td>Offers experiential learning</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Offers student organization program &amp; activities</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>School &amp; community partners are engaged</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Key stakeholders are continually asked, involved, recognized &amp; informed about all components of the integrated program</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Competent &amp; technically certified agricultural education teachers provide the core of the program (Types: PCTA, SCTA)</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>System of needs assessment &amp; evaluation provides information necessary for continue program development &amp; improvement</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

a) Recommends local, state and national curriculum materials
b) Assessment question is linked to a CTE program standard / measurement criterion that students have studied. The standards have been identified by Arizona business and industry leaders as critical to success in their business.

A Program of Study is a comprehensive, structured approach for delivering academic and career and technical education to prepare students for postsecondary education and career success according to the Arizona Department of Education, Career and Technical Education website. The ten components of a Program of Study (POS) are: (a) legislation and policies; (b) partnerships; (c) professional development; (d) accountability, and evaluation systems; (e) college and career readiness standards; (f) course sequences; (g) credit transfer agreements; (h) guidance counseling, and academic advisement; (i) teaching, and learning strategies; and (j) technical skills assessments (Programs of Study, 2011). The Tech Prep Program Quality Indicators developed by the National Association for Tech Prep Leadership (NATPL) January 2007, March 2003, and February 1999 have five integral components: (a) accountability and sustainability; (b) student opportunities; (c) curriculum; (d) articulation, and (e) professional development (Arizona Tech Prep, 2011). The Perkins Core Indicators for secondary school include: (a) student academic attainment in reading/language arts and math; (b) technical skill attainment; (c) secondary school completion (d) graduation rates; and (e) placement; and (f) nontraditional participation/completion (Core Indicators, Secondary Level, 2011).

Using a framework that increases quality education in school districts can help design maps for continuous improvement in student education. In a project conducted by The National Council for Agricultural Education, NQPS for secondary agricultural education were developed out of a need 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 (The National Council for agricultural education, 2006). The lack of clear, accountable program standards for a quality agricultural education program in Arizona hinders implementation of statewide enforcement policies. As far back as 1998, Douglas Norton, Auditor General, made the recommendation to the members of the Arizona legislature that,

   In order to fulfill its mandate, the Board [Arizona State Board for Vocational and Technological Education] needs to address and resolve many of the important issues impacting vocational education. For example …the Board needs to address problems in implementing recent state funding changes that tie funding more closely to vocational programs’ success in preparing students for work. To provide better oversight, the Board needs to devote additional time to vocational education issues at its meetings and revitalize its Vocational Education Advisory Committee. To further enhance its oversight role, the Board should also ensure improvements are made in the Department of Education’s (ADE’s) system for monitoring vocational education program outcomes… (Norton, 1998).

Differentiated instruction, standards-based curriculum, and end of course assessments are not required in all high schools (Hartnell, 2011). A standards-based curriculum defines a cumulative body of knowledge and set of competencies that is the basis for quality education. Standards express what all students should know and be able to do, but do not dictate pedagogy (Ministry of Education, 1998; Ravitch, 1996). Setting national standards allows for equal student opportunity. The National Quality Program Standards for Secondary (Grades 9-12) agricultural education are a result of a need 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. Input from local, state and national leaders was sought and obtained regarding the qualities of highly successful agricultural education programs (The Council, 2012).

In an agricultural education program, the integrated model incorporates classroom and laboratory instruction, experiential learning and student leadership and personal development (National FFA, 2012). On-line learning often uses an integrated or blended model approach. Blended teaching and learning in an integrated curriculum creates opportunities for learning that are not found in a traditional discipline-specific, pure classroom model such as multi-dimensional analysis; exploration of discipline domain problems from new vantage points and the ability to collaborate with students and colleagues in a geographically and socially diverse community (Laster, 2004). Integrated programs of school-based intervention are expected to be more efficient to deliver, easier to implement with high quality and integrity, and more sustainable (Domitrovich, et al., 2009).

In an agricultural education program, year-round instruction occurs through many of the summer FFA-related events and SAEs which offer experiential learning. In her study, Lyttle (2011) suggested that “…schools are turning from traditional calendars to year-round calendar systems for the betterment of the student’s education and more teacher stability” (p. 10). Advantages include the more cost-effective use of school facilities as well as staff resources, helping to reduce class sizes and overcrowding in classrooms, in addition to lowering turnover rates among teachers and increasing yearly state test scores among students attending year-round schools (Lyttle, 2011). Teachers may spend less classroom time reviewing material since less time elapses between school sessions, inter sessions may be used for remediation courses and tutoring, or for enrichment activities in addition to possibly decreasing teacher and student
absences due to shorter instructional cycles. Agricultural education programs involve students from year-round school schedules as well as traditional school schedules.

Facilities and equipment in an agricultural education program link classroom instruction to hands-on experience (Broyles, 2004). Hands-on learning is heightened when students can perform certain aspects of a task themselves. They can accomplish this if facilities are furnished with equipment and modules that are correlated with the relevant curriculum (Broyles, 2004). When teachers take a support role as requisite of inquiry-based or collaborative learning, instruction must be student centered with active participation in the learning process encouraged (Clark, Ewing, & Foster, 2011). Teachers can tell students what they have learned and hope that it transfers over to students but the evidence is clear that students must do the work of learning by actively making connections (Barkley, Cross & Major, 2005). Providing the appropriate tools gives learners the opportunity to be engaged in their own learning. Appropriately equipped facilities enable the student to develop skills through cognitive, affective, and psychomotor learning (Broyles, 2004).

Tasks calling for complex thinking, a deeper understanding of subject matter, and open-ended responses will require performance assessments as schools place more emphasis on higher-level thinking and problem solving to evaluate learning (Herman, 2010; Phelan & Phelan, 2010). While the term test denotes a more traditional, multiple-choice-dominated standardized test, the term assessment has come to mean more of a broader array of methods used to measure student learning (Herman, 2010). Multiple assessment methods that provide a basis for observing, evaluating, interpreting and judging students’ learning and achievement may be necessary in order to make better decisions on student progress. In any case, effective assessments are those which require teachers to have a clear understanding of the learning goal,
provide tasks that allow them to see if these goals are met and have the ability to interpret the evidence collected (Phelan & Phelan, 2010).

The multiple assessment methods for evaluating student learning, whether summative or formative, performance or pencil-and-paper, are used by teachers in an effort to guide them in adjusting instruction to improve educational practice (Phelan & Phelan, 2010). When the test becomes more important than the learning, less attention is placed on complex thinking and problem solving and more attention is placed on what is tested and how it is tested (Herman, 2010). As testing not only provides technical evidence that informs multiple categories of decisions and policy functions, it can also provide sociopolitical meanings that impact educational practice when the purpose of the assessment is to declare students’ readiness for subsequent success (Herman, 2010). Standard 3.2 of the Resource Guide for the Standards and Rubric for School Improvement sponsored by the Arizona Department of Education in collaboration with SchoolsMovingUp™ is Multiple Assessments and denotes that, “Multiple and varied assessments and evaluation strategies are used appropriately and effectively” (heading, 3.2). In a quote on the same website, from Understanding by Design, authors Wiggins and McTighe state, “In fact, a central premise of our argument is that understanding can be developed and evoked only through multiple methods of assessment” (quoted section, para. 1).

Instruction is designed purposefully to help produce a desired change (Brown & Green, 2006). Well-designed and appropriate assessments can provide evidence of the desirable change. According to Rossett (1995), “The important role that needs assessment plays is to give us information, at the beginning of the effort, about what is needed to improve performance” (p. 184). An ongoing effort of what works and what doesn’t without wasting resources allows educators to make informed decisions. A system of needs assessment and evaluation may
provide information necessary for continual program development and improvement (NQPS, 2009) as well as modernizing per community requirements in order to reflect learning centered principles and flexibility in their physical design.

School and community partners engaged in developing and supporting quality programs may provide formative assessment opportunities when key stakeholders are continually asked, involved, recognized, and informed about all components of an integrated program (NQPS, 2009). One of the Arizona Department of Education eight value statements is to be customer focused in that education understands the needs, delivers quality service and exceeds expectations (Arizona Department of Education, page Mission, Vision, Motto & Values, 2011). In order to deliver quality service and exceed expectations, CTE programs have been determined through the use of state labor market data to be those of high skill, high wage and/or high demand career opportunities for students (US Department of Education, page Overview Comprehensive Career and Technical Education Programs, 2012).

The business community demands more highly educated employees prompting the development of more rigorous agricultural education content standards and the assurance that they are implemented within these programs (Chason & Hutchinson, 2009). In order to make the content standards meaningful, individuals from business, industry, secondary and postsecondary education, government, commodity groups, as well as agricultural organizations took part in the creation of the National Quality Content Standards for agricultural education (Chason & Hutchinson, 2009).

To assist in allowing local involvement in developing, implementing and improving CTE, Perkins IV allows significant variation in how states implement some performance measures as well as how they evaluate the effectiveness of their programs (Government
Accountability Office, 2009). The dynamic atmosphere of funding and what works in education may require all partners in education to be continually engaged in the ongoing effort to put more qualified workers back into the economy. When Secretary of Education, Arne Duncan addressed the 2010 National FFA Convention, he said that, “for the U.S. economy to continue to rebound and grow, America's biggest employer has to help lead the way” (U.S. Department of Education, 2010, “Agricultural Education in the 21st Century”). That employer, the biggest in our nation, is agriculture and it is central to the future of American prosperity, according to Duncan. Twenty-one million Americans, or 20 percent of the U.S. workforce, work in the agricultural sector. And the agricultural sector is growing despite the economic downturn.

According to the Arizona Department of Education CTE Handbook, in section Vital Data Required for Funding (2011), “Only Career Preparation courses that are part of an approved program and taught by an appropriately certified teacher will generate state funding for 11th and 12th grade students” (pg. 3). The CTE Handbook lists certification requirements and endorsements necessary for each program and course and a report (VOCI 17) is for the specific purpose of alerting each district to the non-certification status of a teacher for a specific CTE program. Joint Technological Education Districts (JTED) instructors must also be CTE certified by the State Board of Education or by a postsecondary educational institution per A.R.S.§ 15-391.3.b (Arizona CTE Handbook, 2011). Non-certification can mean an invalid teacher certification number or the certification types and/or endorsement is invalid for the CTE program.

CTE funding will be interrupted when a district fails to meet the reporting deadline. Funding resumes when the problem has been corrected. If the problem is not corrected, funding does not resume. The National Quality Program Standard 6 stated that competent and
technically certified agricultural education teachers provide the core of the program. Certification is easily gauged but competency may be a little harder to determine. The Merriam-Webster (2012) definition of competent is: 1: proper or rightly pertinent; 2: having requisite or adequate ability of qualities: fit; 3: legally qualified or adequate; 4: having the capacity to function or develop in a particular way. To determine a teacher’s ability to be competent may require knowledge of a teacher’s self-efficacy beliefs.

Role of agricultural education in quality and leadership. All of the high performing countries in an international comparison of student achievement require that teachers be experts in the subjects they teach (Tucker, 2011) and agricultural education is one of the few specific subject and craft CTE teacher preparation programs in the United States.

Crossing disciplinary divisions due to its diversity of lessons and options, agricultural education has shifted from preparing students specifically for the agriculture workforce to updating the curriculum, to emphasize science and integrating academics with agricultural education (Broyles, 2004). Advanced reading skills are mastered through technical manuals; math skills are utilized through carpentry calculations; biology is taught during animal reproduction units and chemistry is taught as students work through soil sciences to name a few examples.

Agricultural education also crosswalks with most of Arizona’s Instrument to Measure Standards (AIMS), National Academic Skills, and National Cluster Content skills. Agricultural education curriculum also crosswalks with many of the 21st Century Employment skills, and NETS. Association for Career and Technical Education Engineering and Technology Division vice president, Bob Putnam believed that, “…disciplinary divisions will be largely reduced or even eliminated and students will study language arts, mathematics and technology as a seamless
area of study” (p. ii). Interdisciplinary teaching is a method, or set of methods, used to teach a unit across different curricular disciplines. Moving effective programs into interdisciplinary programs has cost benefits. Integrated instruction helps teachers better utilize instructional time and look deeper into subjects through a variety of content-specific windows. Another benefit of integrated instruction is that teachers can better differentiate instruction to individual student needs. Integrated instruction also allows for authentic assessment (Barton & Smith, 2000). A final benefit of interdisciplinary teaching is that students have a chance to work with multiple sources of information, thus ensuring they are receiving a more inclusive perspective than they would from consulting one textbook (Wood, 1997). When educators provide the needed neutrality, others get beyond multidisciplinary planning to interdisciplinary optimization (Swanson & Wilson, 1996). One year of schooling does not create the same amount of acquired knowledge regardless of the quality of the education system in which it takes place, but delivers different increases in skills depending on the efficiency of the education system, the quality of teaching, the educational infrastructure, or the curriculum (Hanushek & Wößmann, 2007). Research suggests that the problem-solving method, in particular, is secondary agricultural education’s pedagogical analogue to the inquiry-based teaching and learning practices heralded by science education researchers (Parr & Edwards, 2004).

Agricultural education programs across the State of Arizona are considered the high quality model of programs (Fiscus & Wojcik, 2009), as well as the premier educational delivery system (Elliott, 2007; Foster, 2007). Yet career and technical education teacher preparation programs are declining (Foster, 2007), Arizona does not have a CTE administrator preparation program and principal preparation programs fail to prepare graduates as instructional leaders (Lynch, 2012). Chason and Hutchinson (2009) indicated that many of the decisions relating to
what courses are taught, how teachers were trained and why students enrolled in agriculture classes were often based on haphazard decisions. Education quality, in general, is not consistent, and total program quality has not been defined consistently or scientifically. Several states have developed program standards and quality indicators; however, most of these indicators and standards vary from state to state and also lack accountability. Jenkins, Kitchel, and Hains used the Fenstermacher and Richardson (2005) definitions of good, quality, and successful teaching as the lens to interpret their findings in Defining Agricultural Education Instructional Quality (2010).

While different agricultural education programs in Arizona have different career options that are the focus in the upper content standards, content standards 1 – 26 are the same. Providing quality content standards as a guide for agricultural education teachers is an important component in assuring rigorous and relevant classroom instruction that prepares students for an exciting and productive career in agriculture (Chason & Hutchinson, 2009). Complete agricultural education programs exemplify the necessary factors of pedagogy, providing for real, social, relevant, reflective, self-regulatory, and multiple venues for understanding science (Ricketts, Duncan, & Peake, 2009) and is composed of three distinct, yet interrelated components. The classroom and laboratory component provide students the opportunity to learn concepts and theories dealing with a range of agricultural and agribusiness topics. The laboratory, whether it is a biotechnology laboratory or a land laboratory, is where concepts and theories are carried through to their application. Students are taught using hands-on skills that ensure learning is practical and usable.

The work or real-world component allows students to apply both classroom and laboratory instruction through a Supervised Agricultural Experience Program (SAEP) or simply
Supervised Agricultural Experience (SAE). SAEs can vary from the traditional home projects to entrepreneurship or cooperative work experience in production or agribusiness.

The third component is the career and technical student organization, FFA. As an integral, intracurricular component of the agricultural Education program, FFA has numerous systems to deliver instruction in leadership. In addition, FFA provides incentives for improved student performance through its awards program. The optimal benefit of the program occurs when a student is an active participant of all three components (Georgia Agricultural Education, 2012).

A program will receive a conditionally approved designation from ADE/CTE for the following:

- District applies for and receives a one year exemption for an essential element requirement. The program will then be conditionally approved for one year.
- District fails to meet 90 percent of the State Adjusted Level of Performance (SALP) on any Performance Measure. The district will be placed on an Improvement Plan for up to three years and then the program(s) will become unapproved.
- District is operating on a Local Adjusted Level of Performance (LALP) for any performance measure. The district will be placed on an Improvement Plan for up to three years and then the program(s) will become unapproved (Arizona Department of Education, 2011).
Summary

Arizona CTE administrators in Arizona face a variety of issues and challenges. Research indicates that leadership issues top many lists of concerns. Effective leadership requires high levels of agency and confidence and in today’s environment of accountability, rapid change, community collaboration and high turnover rates, leaders must be able to welcome or accept these challenges (Hannah et al., 2008) or risk removal of or decrease in program funding. This highly dynamic atmosphere and increasing responsibilities suggests CTE administrators must become efficacious leaders willing to develop and delegate to their staff as well as to their district CTE educators. Knowledgeable and capable administrators are critical to student achievement but these individuals are often overwhelmed by the management responsibilities of administering.

Education Week’s Diplomas Count 2007 showed that strong CTE programs can reduce high school dropout rates and increase earnings in the short-term and medium-term. Strong programs need to be identified, built upon or ended in order to meet the demands of the business community whose requirement of high quality workers continues to drive education reform. The key elements of high quality CTE programs are enhanced academics with applied learning, connections to career pathways and the labor market, developing 21st Century and employability skills, exposure to work and mentoring from employers, and opportunities to connect to postsecondary education, are shown to be effective for students (Brand, 2008).

CTE programs including agricultural education across the State of Arizona vary widely in quality without enforcement by the state department of education. Education quality, in general, is not consistent, and total program quality has not been defined consistently or scientifically. However, once a program is deemed unapproved, it is not longer eligible for federal or state
funding. The term quality means different things to different people. The lack of clear, accountable program standards for a high quality agricultural education program in Arizona hinders implementation of statewide enforcement policies. Arizona agricultural education is in need of one set of strong, consistent expectations for what all Arizona programs should look like in order to maintain or obtain funding and eligibility.

Enforcement of high quality CTE programs requires strong leadership. Few school systems have made identifying and promoting potential leaders a priority and limited educational research has been done to determine the relevance of CTE leadership development (VanderMolen & Zinzer, 2009). Leadership plays a significant role in school improvement (Thoonen et al., 2011) and CTE leaders who place emphasis on accountability and student achievement (Clark et al., 2010) will require leadership self-efficacy in order to successfully exert leadership by setting a direction for the work group, building relationships with followers in order to gain their commitment to change goals, and working with them to overcome obstacles to change (Paglis and Green, 2002).
CHAPTER 3: PROCEDURES

Purpose of the Study

The purpose of the study was to describe the leadership self-efficacy among Arizona CTE administrators' in terms of their capability to evaluate the quality of a secondary agricultural education program. Furthermore, the study sought to determine the perceptions of CTE administrators regarding important elements of a high quality agricultural education program. To guide the study, the following research objectives were developed.

Research Objectives

1. Describe characteristics of Arizona CTE administrators in terms of age; sex; level of education; years as a CTE administrator; subjects taught; tenure in education status; certification(s) and specific training(s); district size; and number of subordinates.

2. Describe Arizona CTE administrators’ perceptions of their leadership self-efficacy in their capability to evaluate the quality of an agricultural education program.

3. Describe Arizona CTE administrators’ perceptions of their leadership self-efficacy in determining important elements of a high quality agricultural education program.

4. Describe the relationship between number of years as a CTE administrator and CTE administrators’ perceptions of their capability to evaluate the quality of an agricultural education program.

5. Describe the relationship between number of years as a CTE administrator and CTE administrators’ perceptions of important elements of a high quality agricultural education program.
6. Describe the relationship between CTE administrators’ subject(s) taught and CTE administrators’ perceptions of their capability to evaluate agricultural education program.

7. Describe the relationship between CTE administrators’ subject(s) taught and CTE administrators’ perceptions of important elements of a high quality agricultural education program.

**Research Design**

This study used a descriptive-correlational survey research design. Descriptive statistics enable the researcher to describe data with numerical indices or in graphic form. A correlational study is a quantitative research method using two or more quantitative variables from the same group of subjects. Fraenkel and Wallen (2006) described survey research as an effort to obtain data from members of a population to determine the current status of that population with respect to one or more variables.

This study investigated Arizona CTE administrators’ perceptions of and attitudes toward the quality of agricultural education programs. The study sought to determine the perceptions of CTE administrators regarding their capability to evaluate agricultural education programs as well as their perceptions of the most important elements of a high quality agricultural education program.

**Population and Subject Selection.** There are 119 CTE administrators within Arizona school districts. The target population for this study consisted of all CTE administrators in Arizona school districts who oversaw agricultural education programs within their district (N = 60). Frame error was addressed by obtaining the current, up to date directory of CTE administrators in the state of Arizona for the 2011- 2012 school year from the State FFA
Executive Secretary. The frame is updated annually by the State Department of Education. The frame was then cross-referenced with the Arizona Department of Education website. In addition, phone calls were made to schools where discrepancy between the two lists occurred. Sampling error was avoided by taking a census of all CTE administrators in the state of Arizona who oversee agricultural education programs was used and no inferences were made. Selection error was addressed by obtaining the current, up to date directory of CTE administrators in the state of Arizona for the 2011-2012 school year. The frame was purged of any duplicates and/or administrators currently not serving as an administrator.

**Instrumentation.** A three-part, 63-item researcher developed instrument was used to collect data for the study. The first part of the instrument included 26 items to determine subjects’ perceptions of the importance of high quality agricultural education programs. The items were constructed from the components of the National Quality Program Standards for secondary (Grades 9-12) agricultural education (Team Ag Ed Learning Center, n.d.). Part two of the instrument included 25 items to describe the perceptions of subjects’ capability to evaluate the quality of agricultural education programs. The items in part two were developed from the components of the National Quality Program Standards for Secondary (Grades 9-12) agricultural education (Team Ag Ed Learning Center, n.d.). For the 26 items in part one, participants were asked to report their level of agreement with each statement using an eight point summed rating scale (1 = extremely unimportant, 2 = very unimportant, 3 = moderately unimportant, 4 = mildly unimportant, 5 = mildly important, 6 = moderately important, 7 = very important, 8 = extremely important). For the 25 items in part two, participants were asked to report their level of agreement with each statement using an eight point summed rating scale (1 = very strongly
disagree, 2 = strongly agree, 3 = moderately disagree, 4 = mildly disagree, 5 = mildly agree, 6 = moderately agree, 7 = strongly agree, 8 = very strongly agree).

The third part of the instrument included questions designed to collect demographic characteristics. Specifically, the instrument collected information on participants’ age, sex, level of education, tenure status, subjects taught, years as a CTE administrator, specific certification(s) and training(s), percentage of time devoted to selected activities, district size, and the number of subordinates. The demographic data were used to describe the population of CTE administrators in Arizona who direct agricultural education programs within their district.

**Instrument Validity.** Face and content validity of the questionnaire were determined by a panel of four experts in the field of agricultural education and leadership with knowledge of face and content validity. Face validity appeared “valid for its intended purpose” (Ary et al., 2010, p. 439). Content validity concerns the extent to which a specific set of activity/factor items reflects a content domain (DeVellis, 2003). The experts were instructed to evaluate each item for appropriateness of the item for the respective construct as well as item clarity. Modifications were made to the instrument for each item based on the recommendations of the panel of experts. A list of all panel members is located in Appendix A. Content validity was determined as a means to ensure the quality of research through the same panel of experts in the field of agricultural education and leadership. Clarity of each item was addressed by the panel on a copy of the document and returned for editing and/or re-wording the activity/factor. Modifications were made to the instrument based on the recommendations of the panel of experts.

**Reliability Procedures.** The questionnaire was piloted amongst Arizona CTE administrators who did not supervise agricultural education programs. The administrators were
chosen as a similar population and were not included in the census of the study. Instrument reliability, a measure of internal consistency (Ary et al., 2006, p. 264), was determined by computing a Cronbach’s alpha for both affective variables. The reliability of the instrument was assessed through the pilot test (n = 11) using the Cronbach’s alpha internal consistency reliability coefficient. Cronbach’s alpha is concerned with the homogeneity of the items within a scale (DeVellis, 2003). Bandura (2006) recommended the use of Cronbach’s alpha to assess the internal consistency of self-efficacy instruments. Eleven administrators responded to the request to participate in the pilot study. A one dollar bill was included in the pilot study data collection packet to encourage response rate. The letter sent to pilot study participants is found in Appendix B.

The data collected from the pilot study were analyzed to determine reliability of the two variables of the instrument. The minimum alpha level of 0.7 was established a priori to determine reliability for each variable. In terms of the perceptions of the importance of the quality of agricultural education program components, a Cronbach’s alpha coefficient of .99 was calculated among the 26 items. A Cronbach’s alpha coefficient of .95 was calculated for the 25 items related to the perceptions of their capability to evaluate the quality of agricultural education program. Since the reliability statistics for each construct and the overall instrument were above the minimum alpha level of 0.7, the instrument was deemed reliable.

**Data Collection Procedures.** Data collection followed Dillman’s (2000) recommendations for mailed questionnaires. Five points of contact were made to achieve a high response rate. Approval from the Institutional Review Board was sought; the research protocol was approved on October 20, 2011 (protocol number 11-0808-00). An initial pre-notice letter (Dillman, 2000) of intent with a one dollar incentive was sent on February 6, 2012, in an effort to
inform CTE administrators about the study and that a questionnaire would be e-mailed to them in a few days (see Appendix D). On February 13, 2012, a cover letter (see Appendix E) along with the questionnaire (see Appendix F) was emailed via DatStat Illume ensuring anonymous response. Approximately one week following distribution of the questionnaire (February 21, 2012), a follow-up email (Appendix G) was sent through DatStat Illume to the administrators in order to determine if they had received and completed the questionnaire. A final contact email (see Appendix H) emphasizing the relevance of the study and the importance of having a large response rate was sent through DatStat Illume on March 5, 2012 to those who had not returned a questionnaire. Data collection ceased on March 9, 2012 yielding a 75 percent response rate (n = 45). The data collection timeline is found in Figure 2.

Figure 2

*Data Collection Timeline*

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>February 6, 2012</td>
<td>Mail pre-notice letter with incentive</td>
</tr>
<tr>
<td>February 13, 2012</td>
<td>E-mail cover letter</td>
</tr>
<tr>
<td></td>
<td>E-mail first data collection instrument</td>
</tr>
<tr>
<td>February 21, 2012</td>
<td>E-mail follow up reminder</td>
</tr>
<tr>
<td>March 5, 2012</td>
<td>E-mail final contact letter</td>
</tr>
</tbody>
</table>

**Data Analysis.** The data were analyzed using the SPSS, version 19 (Statistical Program for the Social Sciences), an IBM computer program used for statistical analysis. Constructs were summated to analyze the data. Cases where individual CTE administrators had more than 15 percent missing in individual domains (importance and capability) were excluded from the data set.
Descriptive statistics were used to address research objective one: describe the demographics (age, sex, level of education, tenure status, subjects taught, years as a CTE administrator, specific certifications, training, percentage of time devoted to selected activities, district size and number of subordinates) of Arizona CTE administrators; research objective two: describe CTE administrators’ perceptions of their capability to evaluate the quality of agricultural education programs in Arizona; and, research objective three: describe Arizona CTE administrators’ perceptions of the most important elements of high quality agricultural education programs.

Pearson product moment correlation coefficients (r) were used to answer research objective four: describe the relationship between number of years as a CTE administrator and CTE administrator’ perceptions of their capability to evaluate the quality of agricultural education programs; research objective five: describe the relationship between number of years as a CTE administrator and CTE administrators’ perceptions of the most important elements of high quality agricultural education programs.
CHAPTER 4: RESULTS

Purpose of the Study

The purpose of the study was to describe the leadership self-efficacy among Arizona CTE administrators' in terms of their capability to evaluate the quality of a secondary agricultural education program. Furthermore, the study sought to determine the perceptions of CTE administrators regarding important elements of a high quality agricultural education program. To guide the study, the following research objectives were developed.

Research Objectives

1. Describe characteristics of Arizona CTE administrators in terms of age; sex; level of education; years as a CTE administrator; subjects taught; tenure in education status; certification(s) and specific training(s); district size; and number of subordinates.

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6. Describe the relationship between CTE administrators’ subject(s) taught and CTE administrators’ perceptions of their capability to evaluate the quality of an agricultural education program.

7. Describe the relationship between CTE administrators’ subject(s) taught and CTE administrators’ perceptions of important elements of a high quality agricultural education program.
Objective One. Objective one sought to describe the demographics of CTE administrators. Frequencies were reported for age, sex, level of education, tenure status, subjects taught; years as a CTE administrator, and district size.

Table 2 describes the ages of respondents. CTE administrators (n = 40) reported a mean age of 46 years (SD = 12.6).

Table 2

Age of Respondents

<table>
<thead>
<tr>
<th>Range</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>22-31</td>
<td>2</td>
<td>5.0</td>
</tr>
<tr>
<td>32-41</td>
<td>10</td>
<td>25.0</td>
</tr>
<tr>
<td>42-51</td>
<td>13</td>
<td>32.5</td>
</tr>
<tr>
<td>52-61</td>
<td>12</td>
<td>30.0</td>
</tr>
<tr>
<td>62-71</td>
<td>3</td>
<td>7.5</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Note. Mean = 46; Std Dev = 12.6
Female respondents (n = 29) made up 64% of respondents and male CTE administrators (n = 16) made up 36% of respondents. Table 3 reports sex of Arizona CTE administrators.

Table 3

*Sex of Respondents*

<table>
<thead>
<tr>
<th>Sex</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>29</td>
<td>64.4</td>
</tr>
<tr>
<td>Male</td>
<td>16</td>
<td>35.6</td>
</tr>
<tr>
<td>Total</td>
<td>45</td>
<td>100.0</td>
</tr>
</tbody>
</table>
CTE administrators with 4-year degrees (n = 12) made up 27% of respondents. Sixty-nine percent of the respondents (n = 31) had graduate degrees. Two of the respondents had doctoral degrees and made up 4% of the respondents. Table 4 reports the level of education achieved by Arizona CTE administrators.

Table 4

Level of Education

<table>
<thead>
<tr>
<th>Degree</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-Year College</td>
<td>12</td>
<td>26.67</td>
</tr>
<tr>
<td>Graduate</td>
<td>31</td>
<td>68.89</td>
</tr>
<tr>
<td>Doctoral</td>
<td>2</td>
<td>4.44</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>45</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Note. Mean = 3.8; Median = 4.0; Std Dev = .52
CTE administrators (n = 44) reported a mean tenure in current position of 5.14 years (SD = 4.6). Table 5 describes the distribution of the number of years of experience as a CTE administrator.

Table 5

CTE Administrator Tenure

<table>
<thead>
<tr>
<th>Tenure</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-5 years</td>
<td>30</td>
<td>66.7</td>
</tr>
<tr>
<td>6-10 years</td>
<td>11</td>
<td>24.4</td>
</tr>
<tr>
<td>11-15 years</td>
<td>3</td>
<td>6.7</td>
</tr>
<tr>
<td>16-20 years</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>21-25 years</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>26-30 years</td>
<td>1</td>
<td>2.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>45</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Note. Mean = 5.14; Std Dev = 4.6
Forty-one percent (n = 44) of CTE administrators teach or previously taught a business course. Twenty percent (n = 44) of the respondents teach or previously taught in an agricultural education program. Table 6 describes the courses taught by Arizona CTE administrators.

Table 6

Courses Taught

<table>
<thead>
<tr>
<th>Course title</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural education</td>
<td>9</td>
<td>20.5</td>
</tr>
<tr>
<td>Auto</td>
<td>1</td>
<td>2.3</td>
</tr>
<tr>
<td>Business Administration</td>
<td>18</td>
<td>40.9</td>
</tr>
<tr>
<td>Construction</td>
<td>2</td>
<td>4.5</td>
</tr>
<tr>
<td>Graphic/Web Design</td>
<td>3</td>
<td>6.8</td>
</tr>
<tr>
<td>FACS</td>
<td>4</td>
<td>9.1</td>
</tr>
<tr>
<td>Health</td>
<td>1</td>
<td>2.3</td>
</tr>
<tr>
<td>Math</td>
<td>2</td>
<td>4.5</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>9.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>44</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
Of CTE administrators (n = 45), 46.7% have been in the educational field between 11 and 20 years and 13% have been in the field between 31 and 40 years with a reported mean tenure of 18.6 years (SD = 7.7). Table 7 describes the number of years CTE administrators have been in the educational field.

Table 7

*Tenure in Education*

<table>
<thead>
<tr>
<th>Tenure</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10 years</td>
<td>7</td>
<td>15.6</td>
</tr>
<tr>
<td>11-20 years</td>
<td>21</td>
<td>46.7</td>
</tr>
<tr>
<td>21-30 years</td>
<td>11</td>
<td>24.4</td>
</tr>
<tr>
<td>31-40 years</td>
<td>6</td>
<td>13.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>45</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Note. Mean = 18.6; Std Dev = 7.7
In an effort to obtain certification and specific administrative training data, the researcher’s questions were ambiguous and as a result, responses were inconsistent. Therefore, this demographic information was not included in the research.

District size was calculated by student count. Of the respondents, 84% (n = 43) administered at districts with between 54 and 10,000 students. Table 8 describes the distribution of the number of students within their district.

Table 8
District size

<table>
<thead>
<tr>
<th>Student count</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – 5000</td>
<td>32</td>
<td>74.4</td>
</tr>
<tr>
<td>5001 – 10,000</td>
<td>4</td>
<td>9.3</td>
</tr>
<tr>
<td>10,001 – 15,000</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>15,001 – 20,000</td>
<td>1</td>
<td>2.32</td>
</tr>
<tr>
<td>20,001 – 25,000</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>25,001 – 30,000</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>30,001 – 35,000</td>
<td>1</td>
<td>2.32</td>
</tr>
<tr>
<td>35,001 – 40,000</td>
<td>2</td>
<td>4.7</td>
</tr>
<tr>
<td>40,001 – 45,000</td>
<td>1</td>
<td>2.32</td>
</tr>
<tr>
<td>45,001 – 50,000</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>50,001 – 55,000</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>55,001 – 60,000</td>
<td>1</td>
<td>2.32</td>
</tr>
<tr>
<td>60,001 – 65,000</td>
<td>1</td>
<td>2.32</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>43</td>
<td>100.0</td>
</tr>
</tbody>
</table>
The question of “How many employees do you supervise?” was also vague and consequently CTE administrators reported in some cases direct subordinates only and in other cases, direct subordinates and CTE teachers. As a result, these data were also not reported.
**Objective Two**  Objective two sought to describe CTE administrators’ perceptions of their capability to evaluate the quality of agricultural education programs. Frequencies were reported for each of the eight points on the Likert-type scale for the 25 items related to capability. The CTE administrators in this study reported a mean level of importance of 6.74 (SD = 1.1). Of the 25 items, 1% (n = 5) of the individuals very strongly disagreed with their capability to evaluate the quality of an agricultural education program while 14% (n = 6) of the respondents indicated they very strongly agreed they were capable of evaluating the quality of agricultural education program. Eighty-two percent of respondents strongly agreed that they were capable of continually asking key stakeholders about the components (classroom/laboratory instruction, SAE, and FFA) of the agricultural education program. Respondents also strongly agreed (82%) that they were capable of continually informing key stakeholders about the components of the program. Table 9 describes the distribution of perceived leadership self-efficacy in their capability to evaluate the quality of agricultural education programs.
<table>
<thead>
<tr>
<th>Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>The standards based curriculum is delivered through an integrated model that incorporates classroom and laboratory instruction.</td>
<td>1.0</td>
<td>2.2</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>1.0</td>
<td>2.2</td>
</tr>
<tr>
<td>The standards based curriculum is delivered through an integrated model that incorporates “work-based” learning (SAE).</td>
<td>1.0</td>
<td>2.2</td>
<td>1.0</td>
<td>2.2</td>
<td>0.0</td>
<td>0.0</td>
<td>1.0</td>
<td>2.2</td>
</tr>
<tr>
<td>The standards based curriculum is delivered through an integrated model that incorporates a CTSO for student leadership and personal development (FFA).</td>
<td>1.0</td>
<td>2.2</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>1.0</td>
<td>2.2</td>
</tr>
</tbody>
</table>

*Note.* 1 = Very Strongly Disagree; 2 = Strong Disagree; 3 = Moderately Disagree; 4 = Mildly Disagree; 5 = Mildly Agree; 6 = Moderately Agree; 7 = Strongly Agree; 8 = Very Strongly Agree.
Table 9 (continued)

*Capability to Evaluate Quality Agricultural Education Programs*

<table>
<thead>
<tr>
<th>Item</th>
<th>1 f</th>
<th>2 f</th>
<th>3 f</th>
<th>4 f</th>
<th>5 f</th>
<th>6 f</th>
<th>7 f</th>
<th>8 f</th>
</tr>
</thead>
<tbody>
<tr>
<td>f %</td>
<td>2.0</td>
<td>0.0</td>
<td>2.2</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>The agricultural education program promotes academic achievement of</td>
<td>1.0</td>
<td>2.2</td>
<td>0.0</td>
<td>0.0</td>
<td>1.0</td>
<td>2.2</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>all students through year-round instruction.</td>
<td>4.0</td>
<td>8.9</td>
<td>10.0</td>
<td>22.2</td>
<td>16.0</td>
<td>35.6</td>
<td>13.0</td>
<td>28.9</td>
</tr>
<tr>
<td>Note. 1 = Very Strongly Disagree; 2 = Strong Disagree; 3 = Moderately</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree; 4 = Mildly Disagree; 5 = Mildly Agree; 6 = Moderately</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agree; 7 = Strongly Agree; 8 = Very Strongly Agree.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

(continued)
Table 9 (continued)

*Capability to Evaluate Quality Agricultural Education Programs*

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<tr>
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<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>The facilities in the agricultural education program class/laboratory area supports implementation of the program by providing students the opportunities to apply knowledge and skills.</td>
<td>1.0</td>
<td>2.2</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>1.0</td>
<td>2.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6.0</td>
<td>13.3</td>
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<td></td>
<td></td>
<td>22.0</td>
<td>48.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>15.0</td>
<td>33.3</td>
</tr>
<tr>
<td>The appropriate program option equipment in the agricultural education program class/laboratory area supports implementation of the program by providing students the opportunities to develop knowledge and skills.</td>
<td>0.0</td>
<td>0.0</td>
<td>1.0</td>
<td>2.2</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>1.0</td>
</tr>
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<td></td>
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<td></td>
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<td>24.0</td>
<td>53.3</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13.0</td>
<td>28.9</td>
</tr>
</tbody>
</table>

*Note.* 1 = Very Strongly Disagree; 2 = Strong Disagree; 3 = Moderately Disagree; 4 = Mildly Disagree; 5 = Mildly Agree; 6 = Moderately Agree; 7 = Strongly Agree; 8 = Very Strongly Agree.
Table 9 (continued)

**Capability to Evaluate Quality Agricultural Education Programs**

<table>
<thead>
<tr>
<th>Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f %</td>
<td>f %</td>
<td>f %</td>
<td>f %</td>
<td>f %</td>
<td>f %</td>
<td>f %</td>
<td>f %</td>
</tr>
<tr>
<td>The appropriate program option equipment in the agricultural education program class/laboratory area supports implementation of the program by providing students the opportunities to apply knowledge and skills.</td>
<td>0.0</td>
<td>0.0</td>
<td>1.0</td>
<td>2.2</td>
<td>0.0</td>
<td>0.0</td>
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</tr>
<tr>
<td></td>
<td>1.0</td>
<td>2.2</td>
<td>0.0</td>
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<td>0.0</td>
<td>3.0</td>
<td>6.7</td>
<td>6.0</td>
</tr>
<tr>
<td>The agricultural education teacher(s) utilizes multiple methods to assess student learning that illustrates academic achievement.</td>
<td>0.0</td>
<td>0.0</td>
<td>1.0</td>
<td>2.2</td>
<td>0.0</td>
<td>0.0</td>
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<tr>
<td></td>
<td>3.0</td>
<td>6.7</td>
<td>6.0</td>
<td>13.3</td>
<td>15.0</td>
<td>33.3</td>
<td>20.0</td>
<td>44.4</td>
</tr>
<tr>
<td>The agricultural education teacher(s) utilizes multiple methods to assess student learning that illustrates skill development.</td>
<td>1.0</td>
<td>2.2</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>3.0</td>
<td>6.7</td>
</tr>
<tr>
<td></td>
<td>8.0</td>
<td>17.8</td>
<td>14.0</td>
<td>31.1</td>
<td>19.0</td>
<td>42.2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. 1 = Very Strongly Disagree; 2 = Strong Disagree; 3 = Moderately Disagree; 4 = Mildly Disagree; 5 = Mildly Agree; 6 = Moderately Agree; 7 = Strongly Agree; 8 = Very Strongly Agree.*
Table 9 (continued)

*Capability to Evaluate Quality Agricultural Education Programs*

<table>
<thead>
<tr>
<th>Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>The agricultural education program is enhanced through active participation by all students in a year-round “work-based” learning program (SAE).</td>
<td>1.0</td>
<td>2.2</td>
<td>1.0</td>
<td>2.2</td>
<td>1.0</td>
<td>2.2</td>
<td>3.0</td>
<td>6.7</td>
</tr>
<tr>
<td></td>
<td>12.0</td>
<td>26.7</td>
<td>16.0</td>
<td>35.6</td>
<td>10.0</td>
<td>22.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The program has active participation by all agricultural education students in a year-round Career and Technical Student Organization (FFA).</td>
<td>2.0</td>
<td>4.4</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>1.0</td>
<td>2.2</td>
</tr>
<tr>
<td></td>
<td>6.0</td>
<td>13.3</td>
<td>7.0</td>
<td>15.6</td>
<td>14.0</td>
<td>31.1</td>
<td>15.0</td>
<td>33.3</td>
</tr>
<tr>
<td>The school faculty, as a whole, be engaged in developing a quality agricultural education program.</td>
<td>1.0</td>
<td>2.2</td>
<td>2.0</td>
<td>4.4</td>
<td>2.0</td>
<td>4.4</td>
<td>6.0</td>
<td>13.3</td>
</tr>
<tr>
<td></td>
<td>11.0</td>
<td>24.4</td>
<td>12.0</td>
<td>26.7</td>
<td>11.0</td>
<td>24.4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Table 9 (continued)

*Capability to Evaluate Quality Agricultural Education Programs*

<table>
<thead>
<tr>
<th>Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f%</td>
<td>f%</td>
<td>f%</td>
<td>f%</td>
<td>f%</td>
<td>f%</td>
<td>f%</td>
<td>f%</td>
</tr>
<tr>
<td>The school faculty, as a whole, be engaged in supporting a quality agricultural education program.</td>
<td>1.0</td>
<td>2.2</td>
<td>1.0</td>
<td>2.2</td>
<td>2.0</td>
<td>4.4</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>3.0</td>
<td>6.7</td>
<td>10.0</td>
<td>22.2</td>
<td>17.0</td>
<td>37.8</td>
<td>11.0</td>
<td>24.4</td>
</tr>
<tr>
<td>Parents/guardians be engaged in developing a quality agricultural education program.</td>
<td>0.0</td>
<td>0.0</td>
<td>2.0</td>
<td>4.4</td>
<td>2.0</td>
<td>4.4</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>4.0</td>
<td>8.9</td>
<td>14.0</td>
<td>31.1</td>
<td>10.0</td>
<td>22.2</td>
<td>13.0</td>
<td>28.9</td>
</tr>
<tr>
<td>Parents/guardians be engaged in supporting a quality agricultural education program.</td>
<td>0.0</td>
<td>0.0</td>
<td>2.0</td>
<td>4.5</td>
<td>0.0</td>
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<td>14</td>
<td>31.8</td>
<td>17.0</td>
<td>38.6</td>
</tr>
<tr>
<td>Germane businesses be engaged in developing a quality agricultural education program</td>
<td>0.0</td>
<td>0.0</td>
<td>2.0</td>
<td>4.6</td>
<td>2.0</td>
<td>4.6</td>
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<td>4.0</td>
<td>9.3</td>
<td>8.0</td>
<td>18.6</td>
<td>15.0</td>
<td>34.9</td>
<td>12.0</td>
<td>27.9</td>
</tr>
</tbody>
</table>

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Table 9 (continued)

**Capability to Evaluate Quality Agricultural Education Programs**

<table>
<thead>
<tr>
<th>Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
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<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germane businesses be engaged in supporting a quality agricultural education program</td>
<td>0.0</td>
<td>0.0</td>
<td>2.0</td>
<td>4.4</td>
<td>1.0</td>
<td>2.2</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Key stakeholders be continually asked about the components (classroom/laboratory instruction, SAE, and FFA) of the agricultural education program</td>
<td>0.0</td>
<td>0.0</td>
<td>2.0</td>
<td>4.4</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Key stakeholders be continually recognized for their contributions to the agricultural education program</td>
<td>0.0</td>
<td>0.0</td>
<td>2.0</td>
<td>4.4</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

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Table 9 (continued)

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<thead>
<tr>
<th>Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key stakeholders be continually informed about the components of the agricultural education program</td>
<td>0.0</td>
<td>0.0</td>
<td>2.0</td>
<td>4.4</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Appropriately certified agricultural education teachers provide the components of the program.</td>
<td>0.0</td>
<td>0.0</td>
<td>1.0</td>
<td>2.2</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>A system of needs assessment provides information necessary for continual agricultural education program growth</td>
<td>0.0</td>
<td>0.0</td>
<td>1.0</td>
<td>2.2</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>The agricultural education program performance is evaluated annually and meets or exceeds established Sate Performance Measures</td>
<td>0.0</td>
<td>0.0</td>
<td>1.0</td>
<td>2.2</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

*Note.* 1 = Very Strongly Disagree; 2 = Strong Disagree; 3 = Moderately Disagree; 4 = Mildly Disagree; 5 = Mildly Agree; 6 = Moderately Agree; 7 = Strongly Agree; 8 = Very Strongly Agree.
Objective Three. The purpose of objective three was to describe Arizona CTE administrators’ perceptions of the most important elements of high quality agricultural education programs. Frequencies were reported for each of the eight points on the Likert-type scale for the 26 items related to perceived elements of importance. The CTE administrators in this study reported a mean level of importance of 6.75 (SD = 1.5). Of the 26 items, 2% (n = 9) of the individuals felt all quality standards were extremely unimportant while 16% (n = 7) of the respondents indicated the 26 items were extremely important. Seventy-six percent of the respondents indicated that developing student skills year-round was very important and 80% (n = 36) felt it was very important for the school faculty to be engaged in supporting the agricultural education program while a lesser percentage (78%) felt faculty should be engaged in developing the program. Table 10 describes the distribution of perceived leadership self-efficacy in determining the most important elements of high quality agricultural education programs.
### Table 10

**Perceived Importance of a Quality Agricultural Education Programs**

<table>
<thead>
<tr>
<th>Item</th>
<th>1</th>
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</tr>
<tr>
<td>The standards based curriculum is delivered through an integrated model that incorporates classroom and laboratory instruction.</td>
<td>3.0</td>
<td>6.3</td>
<td>0.0</td>
<td>0.0</td>
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<tr>
<td>The standards based curriculum is delivered through an integrated model that incorporates “work-based” learning (SAE).</td>
<td>3.0</td>
<td>6.3</td>
<td>1.0</td>
<td>2.1</td>
<td>0.0</td>
<td>0.0</td>
<td>1.0</td>
<td>2.1</td>
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</tr>
<tr>
<td>The standards based curriculum is delivered through an integrated model that incorporates a CTSO for student leadership and personal development (FFA).</td>
<td>3.0</td>
<td>6.5</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>1.0</td>
<td>2.2</td>
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</tbody>
</table>

*Note.* 1 = Extremely Unimportant; 2 = Very Unimportant; 3 = Moderately Unimportant; 4 = Mildly Unimportant; 5 = Mildly Important; 6 = Moderately Important; 7 = Very Important; 8 = Extremely Important.
Table 10 (continued)

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<table>
<thead>
<tr>
<th>Item</th>
<th>1</th>
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</tr>
<tr>
<td>The agricultural education program promotes academic achievement of all students through year-round instruction.</td>
<td>2.0</td>
<td>4.3</td>
<td>1.0</td>
<td>2.1</td>
<td>0.0</td>
<td>0.0</td>
<td>1.0</td>
<td>2.1</td>
</tr>
<tr>
<td>The agricultural education program promotes skill development of all students through year-round instruction.</td>
<td>3.0</td>
<td>6.4</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>1.0</td>
<td>2.1</td>
</tr>
<tr>
<td>The facilities in the agricultural education program class/laboratory area supports implementation of the program by providing students the opportunities to develop knowledge and skills.</td>
<td>3.0</td>
<td>6.3</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

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<tr>
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</tr>
<tr>
<td>The facilities in the agricultural education program class/laboratory area supports implementation of the program by providing students the opportunities to apply knowledge and skills.</td>
<td>3.0</td>
<td>6.3</td>
<td>0.0</td>
<td>0.0</td>
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<td>0.0</td>
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<tr>
<td></td>
<td></td>
<td>1.0</td>
<td>2.1</td>
<td>20.0</td>
<td>41.7</td>
<td>24.0</td>
<td>50.0</td>
<td></td>
</tr>
<tr>
<td>The appropriate program option equipment in the agricultural education program class/laboratory area supports implementation of the program by providing students the opportunities to develop knowledge and skills.</td>
<td>3.0</td>
<td>6.3</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
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<tr>
<td></td>
<td></td>
<td>4.0</td>
<td>8.3</td>
<td>28.0</td>
<td>58.3</td>
<td>13.0</td>
<td>27.1</td>
<td></td>
</tr>
</tbody>
</table>

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<tr>
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</thead>
<tbody>
<tr>
<td>The appropriate program option equipment in the agricultural education program class/laboratory area supports implementation of the program by providing students the opportunities to apply knowledge and skills.</td>
<td>2.0</td>
<td>4.2</td>
<td>1.0</td>
<td>2.1</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
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</tr>
<tr>
<td>The agricultural education teacher(s) utilizes multiple methods to assess student learning that illustrates academic achievement.</td>
<td>3.0</td>
<td>6.5</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>The agricultural education teacher(s) utilizes multiple methods to assess student learning that illustrates skill development.</td>
<td>3.0</td>
<td>6.5</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
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</tbody>
</table>

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</tr>
<tr>
<td>The agricultural education program is enhanced through active participation by all students in a year-round “work-based” learning program (SAE).</td>
<td>2.0</td>
<td>4.4</td>
<td>2.0</td>
<td>4.4</td>
<td>1.0</td>
<td>2.2</td>
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<tr>
<td></td>
<td>5.0</td>
<td>10.9</td>
<td>8.0</td>
<td>17.4</td>
<td>15.0</td>
<td>32.6</td>
<td>12.0</td>
<td>26.1</td>
</tr>
<tr>
<td>The program has active participation by all agricultural education students in a year-round Career and Technical Student Organization (FFA).</td>
<td>3.0</td>
<td>6.5</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>1.0</td>
<td>2.2</td>
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<tr>
<td></td>
<td>3.0</td>
<td>6.5</td>
<td>12.0</td>
<td>26.1</td>
<td>12.0</td>
<td>26.1</td>
<td>15.0</td>
<td>32.6</td>
</tr>
<tr>
<td>The school faculty, as a whole, be engaged in developing a quality agricultural education program.</td>
<td>1.0</td>
<td>2.2</td>
<td>1.0</td>
<td>2.2</td>
<td>2.0</td>
<td>4.4</td>
<td>1.0</td>
<td>2.2</td>
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<tr>
<td></td>
<td>8.0</td>
<td>17.8</td>
<td>13.0</td>
<td>28.9</td>
<td>9.0</td>
<td>20.0</td>
<td>10.0</td>
<td>22.2</td>
</tr>
</tbody>
</table>

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<tr>
<td>The school faculty, as a whole, be engaged in supporting a quality</td>
<td>2.0</td>
<td>4.4</td>
<td>0.0</td>
<td>0.0</td>
<td>1.0</td>
<td>2.2</td>
<td>0.0</td>
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<tr>
<td>agricultural education program.</td>
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<tr>
<td>Parents/guardians be engaged in developing a quality agricultural</td>
<td>1.0</td>
<td>2.2</td>
<td>1.0</td>
<td>2.2</td>
<td>1.0</td>
<td>2.2</td>
<td>1.0</td>
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<tr>
<td>education program.</td>
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<tr>
<td>Parents/guardians be engaged in supporting a quality agricultural</td>
<td>1.0</td>
<td>2.2</td>
<td>2.0</td>
<td>4.4</td>
<td>0.0</td>
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<td>education program.</td>
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<tr>
<td>Germane businesses be engaged in developing a quality agricultural</td>
<td>0.0</td>
<td>0.0</td>
<td>2.0</td>
<td>4.4</td>
<td>1.0</td>
<td>2.2</td>
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<td>education program.</td>
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</thead>
<tbody>
<tr>
<td>German businesses be engaged in supporting a quality agricultural education program</td>
<td>1.0</td>
<td>2.2</td>
<td>1.0</td>
<td>2.2</td>
<td>1.0</td>
<td>2.2</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Key stakeholders be continually asked about the components (classroom/laboratory instruction, SAE, and FFA) of the agricultural education program.</td>
<td>1.0</td>
<td>2.2</td>
<td>1.0</td>
<td>2.2</td>
<td>1.0</td>
<td>2.2</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Key stakeholders be continually recognized for their contributions to the agricultural education program</td>
<td>1.0</td>
<td>2.2</td>
<td>1.0</td>
<td>2.2</td>
<td>1.0</td>
<td>2.2</td>
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</table>

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<tr>
<td>Key stakeholders be continually informed about the components of the</td>
<td>1.0</td>
<td>2.2</td>
<td>1.0</td>
<td>2.2</td>
<td>0.0</td>
<td>0.0</td>
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<td>program</td>
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</tr>
<tr>
<td>Appropriately certified agricultural education teachers provide</td>
<td>3.0</td>
<td>6.5</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
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<tr>
<td>the components of the program.</td>
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<tr>
<td>A system of needs assessment provides information necessary for</td>
<td>2.0</td>
<td>4.4</td>
<td>1.0</td>
<td>2.2</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
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<td>continual agricultural education program growth</td>
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<td></td>
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<tr>
<td>The agricultural education program performance is evaluated</td>
<td>3.0</td>
<td>6.5</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
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<tr>
<td>annually and meets or exceeds established State Performance Measures</td>
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</tbody>
</table>

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Objective Four. Objective four was to describe the relationship between number of years as a CTE administrator and CTE administrators’ perceptions of their capability to evaluate the quality of agricultural education programs. A Pearson product moment correlation (r = .22) was used by means of Davis’ (1971) conventions to describe the relationship as a low association.

Objective Five. Objective five was to describe the relationship between number of years as a CTE administrator and CTE administrators’ perceptions of the most important elements of high quality agricultural education programs. A Pearson product moment correlation (r = .21) was used by means of Davis’ (1971) conventions to describe the relationships as a low association.

Objective Six. When examining the relationship between CTE administrators’ subject(s) taught and CTE administrators’ perceptions of their capability to evaluate the quality of agricultural education programs, the relationship was found to be highly correlated from an Eta coefficient of .897.

Objective Seven When examining the relationship between CTE administrators’ subject(s) taught and CTE administrators’ perceptions of the most important elements of high quality agricultural education programs, the relationship was found to be very highly correlated from an Eta coefficient of .938.
CHAPTER 5: DISCUSSION

Purpose of the Study

The purpose of the study was to describe the leadership self-efficacy among Arizona CTE administrators' in terms of their capability to evaluate the quality of a secondary agricultural education program. Furthermore, the study sought to determine the perceptions of CTE administrators regarding important elements of a high quality agricultural education program.

To guide the study, the following research objectives were developed.

Research Objectives

1. Describe characteristics of Arizona CTE administrators in terms of age; sex; level of education; years as a CTE administrator; subjects taught; tenure in education status; certification(s) and specific training(s); district size; and number of subordinates.

2. Describe Arizona CTE administrators’ perceptions of their leadership self-efficacy in their capability to evaluate the quality of an agricultural education program.

3. Describe Arizona CTE administrators’ perceptions of their leadership self-efficacy in determining important elements of a high quality agricultural education program.

4. Describe the relationship between number of years as a CTE administrator and CTE administrators’ perceptions of their capability to evaluate the quality of an agricultural education program.

5. Describe the relationship between number of years as a CTE administrator and CTE administrators’ perceptions of important elements of a high quality agricultural education program.
6. Describe the relationship between CTE administrators’ subject(s) taught and CTE administrators’ perceptions of their capability to evaluate the quality of an agricultural education program.

7. Describe the relationship between CTE administrators’ subject(s) taught and CTE administrators’ perceptions of important elements of a high quality agricultural education program.

**Summary of Procedures**

Survey research methods were used for this descriptive-correlational study. A census was conducted among Arizona CTE administrators of districts that have one or more agricultural education program(s). A three-part, 63-item researcher developed instrument was used to collect data for the study. The first part of the instrument included 26 items to determine CTE administrators’ perceptions of the importance of high quality agricultural education programs and was constructed from the components of the National Quality Program Standards for Secondary (Grades 9-12) agricultural education (Team Ag Ed Learning Center, n.d.). Part two of the instrument included 25 items to describe the perceptions of their capability to evaluate quality agricultural education programs and was also developed from the components of the National Quality Program Standards for Secondary agricultural education. For the 26 items in part one, participants were asked to report their level of agreement with each statement using an eight point summated rating scale (1 = extremely unimportant, 2 = very unimportant, 3 = moderately unimportant, 4 = mildly unimportant, 5 = mildly important, 6 = moderately important, 7 = very important, 8 = extremely important). For the 25 items in part two, participants were asked to report their level of agreement with each statement using an eight point summated rating scale (1 = very strongly disagree, 2 = strongly agree, 3 = moderately
disagree, 4 = mildly disagree, 5 = mildly agree, 6 = moderately agree, 7 = strongly agree, 8 = very strongly agree). The third part of the instrument included questions designed to collect demographic characteristics. Specifically, the instrument collected information on participants’ age, sex, level of education, tenure status, subjects taught, years as a CTE administrator, and district size. The demographic data were used to describe the population of CTE administrators who direct agricultural education programs within their district.

Content and face validity of the instrument were achieved through a review of a panel of experts and by a pilot study. The data collected from the pilot study was analyzed to determine reliability of the two domains of the instrument. The minimum alpha level of 0.7 was established a priori to determine reliability for each variable. In terms of their perceptions of the importance of quality agricultural education program components, a Cronbach’s alpha coefficient of .989 (n = was calculated among the 26 items. A Cronbach’s alpha coefficient of .948 was calculated for the 25 items related to the perceptions of their capability to evaluate a quality agricultural education program. Since the reliability statistics for each construct and the overall instrument were above the minimum alpha level of 0.7, the instrument was deemed reliable.

**Conclusions and Implications**

**Summary of Conclusions for Objective One.** Characteristics of Arizona CTE administrators are varied; 41% were previous CTE instructors in the business career cluster. Thirty-two percent were between ages 42 and 51 and 61% have been CTE administrators for less than six years. Of concern is the number of CTE administrators nearing retirement age and the number of administrators with little experience as a CTE administrator. The executive director of Arizona’s Association of Career and Technical Education (AzACTE), Pam Ferguson wrote that
AzACTE is continually asking members “to request the areas for professional development that they are finding they would like to meet the pressing needs of remaining current in their classroom instruction… knowing that new laws or regulatory requirements can have a major impact on the training curriculum and information needed for instruction and practice…knowing the extreme importance in CTE for preparation to compete in a global economy and a global marketplace” (Ferguson, 2012, p. 3) in an effort to keep Arizona CTE administrators abreast in a dynamic field. Current CTE administrators might want to look within their districts for potential leaders in an ongoing effort to identify and prepare CTE leaders who can ensure the development of quality programs (Zirkle, Parker, and McCaslin (2005).

**Implications for Objective One.** Although this study was concerned with CTE administrators in Arizona, Zirkle, Parker, and McCaslin (2005) found a similar lack of CTE leaders stating this shortage had national implications for a “rapidly declining reservoir of experienced educational leaders throughout the U.S.” (p. 64). A key component of CTE programs is youth leadership. Strong student leaders are often recruited for CTE teaching careers. Perhaps channeling students into CTE administrative training would provide a steady pool of leaders. Female CTE administrators make up 64% of Arizona CTE administrators. Studies on the relationship between sex and self-efficacy may need more thorough examination. In addition, future studies may discover better ways of supporting these individuals in an effort to lower attrition rates.

**Summary of Conclusions for Objective Two.** Overall, Arizona CTE administrators strongly agreed that they were capable of evaluating the components of a high quality agricultural education program. In a study to try and determine quality indicators for total agricultural education program quality (instruction, SAE, and FFA) according to experts (agricultural
education teacher educators, state instructional staff, and high school teachers) across the United States, Jenkins (2008) found that an expert panel agreed on 37 quality indicators for Instruction, 19 for FFA and six indicators for SAE. Arizona CTE administrators (n = 45) were in agreement with Jenkins findings that the quality of the teacher was important in that 60% felt it was extremely important that competent agricultural education teachers provide the components of the program and that 44% felt it was extremely important that the teacher be appropriately certified.

**Implications for Objective Two.** Strong CTE leadership is necessary to support competent, high quality agricultural education teachers in an effort to lower attrition rates, provide the equipment necessary for high-interest contextual learning, and support the student leadership opportunities within the CTSOs. The ability to effectively evaluate all the components within an agricultural education program to reinforce and enforce state mandates helps ensure funding. The inability to evaluate dysfunctional agricultural education programs may put jobs and program funding at risk in addition to the removal of equipment, supplies, and possibly entire buildings.

CTE administrators with a high sense of self-efficacy in their capability and willingness to undertake the demands of the job can promote a high sense of efficacy within the group. This collective or group efficacy can be very effective when working together to accomplish goals (Pescosolido, 2003). Specific CTE administrative education and certification may provide opportunities to hone details of this profession. Knowledgeable school leaders who are experts in teaching and learning but are unfamiliar and often overwhelmed with the budgeting, teacher attrition, and compliance, regulations and policy issues of a CTE administrator can be mentored and provided with professional leadership development opportunities. Components of the agricultural education program where the mean was lower overall such as SAE (mean = 6.4); school faculty engagement (mean = 6.2); parent involvement (6.4); and germane business
engagement in developing a program (6.4) may also be topics for in-service or professional development programs.

**Summary of Conclusions for Objective Three.** CTE administrators in this study reported that the components in an agricultural education program were very important. Fifty-eight percent of respondents felt that the standards based curriculum delivered through an integrated model that incorporates classroom and laboratory instruction was extremely important. Over 800,000 students participate in formal agricultural education instructional programs (National FFA Organization, 2011). For these programs to become more academically rigorous and strengthen the connection to postsecondary education and the labor market (Brand, 2008) strong CTE Administrative leadership is required.

**Implications for Objective Three.** CTE administrators with a clear focus on increasing student achievement understand the strategies and processes required from educators in their districts. School leaders serve an important role in developing high-performing schools yet engaging the school faculty as a whole in developing a high quality agricultural education program had a mean of 6.1, lower overall than any of the other responses.

**Summary of Conclusions for Objective Four.** There was a low correlation between the number of years as a CTE administrator and their perceptions of the most important elements of a high quality agricultural education program. The number of years as a CTE administrator may not matter in what one perceives as their ability to evaluate high quality elements in a CTE program.

**Implications for Objective Four.** Little is to be determined from the low correlation between number of years and perceptions of important elements of a high quality program. It may be that one doesn’t know what one doesn’t know.
Summary of Conclusions for Objective Five. There was a low correlation between the number of years as a CTE administrator and their perceptions of capability to evaluate the quality of an agricultural education program.

Implications for Objective Five. Little is to be determined from the low correlation between number of years in administrating CTE programs and perceptions of capability to evaluate quality. Again, it may be a situation where administrators are not yet familiar with all of the facets of an agricultural education program.

Summary of Conclusions for Objective Six. There was a high correlation between subjects previously taught by CTE administrators and their perceptions of the most important elements. CTE administrators who previously taught agricultural education may have observed growth in ability and character in their students. Positive or negative antecedents would affect a CTE administrator’s perceptions of program element importance.

Implications for Objective Six. Agricultural education crosswalks with many core courses in addition to the AIMS, National Academic Skills, National Cluster Content skills, 21st Century Employment skills, and NETS. Agricultural education instructors who went through a formal pedagogy and program training who are now CTE administrators would naturally be more aware of what elements in a CTE program stakeholders consider important.

Summary of Conclusions for Objective Seven. There was a high correlation between subjects previously taught by CTE administrators and their perceptions of their capability to evaluate the quality of an agricultural education program. Quality content standards help students better understand the connection between agricultural education and the sciences, mathematics, social studies, English language arts, world languages, and the arts as National Quality Content Standards for agricultural education standards crosswalks show (Chason & Hutchinson, 2009).
CTE administrators who previously taught an agricultural education program were more efficacious in their perception of capability.

Fenstermacher and Richardson (2005) provided educational insight on instructional quality by defining successful teaching, good teaching and quality teaching. It is essential for continual education improvement that CTE administrators know and support high quality agricultural education teaching methodologies that promote student learning.

**Implications for Objective Seven.** Collegiate pre-service teacher training is provided to future agricultural educators that focus on both pedagogical and agricultural content knowledge in an effort to instill high quality teaching practice (Jenkins, Kitchel, & Hains, 2010) yet there is no collegiate level training specific to CTE administration. States allow administrative certificates to be more inclusive. Zirkle, Parker, & McCaslin (2005) reiterated concerns over the lack of CTE leaders and the development needed to ensure a steady number of individuals when “the factors in the external and internal environment require constant attention as CTE leaders plan, implement and evaluate their programs” (p. 66). CTE Administrative certification programs would be in a position to include the six areas Zirkle (2002) identified as lacking in the Interstate School Leaders Licensure Consortium standards: liability, program costs, teacher recruitment and licensure, funding, business/industry partnerships and labor market information, and transition services (Zirkle et al.). In addition CTE leadership programs at the collegiate level could include curriculum to address McCaslin and Parker’s (2003) five major themes of developing leadership capability, understanding policy development processes, understanding the culture and context in which programs operate, delineating vision and mission statements, and lead change and reform initiatives (Zirkle et al.). Arizona is not on the list of colleges and universities known to offer a CTE administrator program.
**Recommendations/Discussion**

Program viability and sustainability requires that agricultural education stakeholders understand CTE administrators perceptions and attitudes toward the quality of programs. According to Zirkle, Parker, and McCaslin (2005) CTE leaders must be able to identify the need of individuals involved in CTE to ensure the development of high quality programs. The 2006 reauthorization of the Perkins CTE Act or Perkins IV requires Arizona to report annually on the core indicators at the secondary (and post secondary) level for all students as well as the effectiveness of their tech-prep programs. Perkins IV requires each career and technical program to maintain at least 90% of any performance measure for any core performance indicator. Consequences for missing any performance requirements will result in local program improvement or partial loss of funding, which may result in losing the program completely. A new reauthorization blueprint was developed by the Department of Education and focuses on a more rigorous, relevant and results-driven CTE. Four core principles are the alignment between CTE and labor market needs; Collaboration among secondary and postsecondary institutions, employers and industry to improve the quality of CTE programs; Accountability for improving academic outcomes based upon common definitions and clear metrics for performance; and Innovation supported by systemic reform of state policies and practices to support CTE implementation of effective practices at the local level.

Arizona does not have a specific CTE administration certification program at the collegiate level. Courses that provide future CTE administrators with pre-service training and opportunities to practice leadership, knowledge about liability, and program costs, funding and policy practices as well as community partnerships, recruitment, and transition issues before workplace pressures ensue, may better serve Arizona CTE as a whole.
With Arizona estimated to have received $24,786,970 from the Perkins Basic State Grant and $1,880,272 from Tech Prep in fiscal year 2008 (CTE State Profile, 2011), and the support of high quality programs by efficacious CTE administrators, CTE continues to make substantial positive differences in education.
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Appendix A: Panel of Experts

Ryan M. Foor, Assistant Professor, University of Arizona

Edward Franklin, Associate Professor, University of Arizona

James Knight, Professor, University of Arizona

Robert Torres, Professor and Department Head, University of Arizona
Appendix B: Pilot Test Pre-Notice Letter

December 13, 2011

Title First Name Last Name
School Name
Address
City, State Zip

Greetings Title Last Name:

You have been identified as a Career and Technical Education Administrator in the state of Arizona for a pilot test.

In a few days you will receive a request to complete an electronic questionnaire regarding your leadership self-efficacy in identifying quality program standards for an agricultural education program. Leadership self-efficacy is one’s belief in their ability to set direction, gaining followers’ commitment, and overcoming obstacles to change.

The email will direct you to a link to access your survey at which time, Illume will validate your credentials before admitting you to the survey. Illume uses secure https connections with 128-bit encryption and signed SSL certificates all in an effort to insure your privacy and anonymity for this study.

We ask that you fill out the entire questionnaire at your earliest convenience and submit it by December 22, 2011.

This research project will provide important information about Career and Technical Education programs and specifically about agricultural education programs within Arizona and your participation is invaluable.

Yours in quality education,

Debora D. Amber
Graduate Assistant

Ryan M. Foor, Ph. D.
Assistant Professor

P. S. We understand how very busy you are and have enclosed a small token of appreciation as a way of saying thank you.
Appendix C: Pilot test Email Reminder

Earlier this week, you received an email from me requesting your participation in a pilot study for the University of Arizona, College of Agriculture and Life Sciences because you are a CTE Administrator in a district that does not have an agricultural education program. This pilot study helps provide important information about Career and Technical Education programs in Arizona and your participation is invaluable. Please take a few minutes to complete this questionnaire as though your district had an agricultural education program, and submit it by December 22, 2011 or at your earliest convenience. If you have already completed and submitted this questionnaire, thank you for your time and effort.

Sincerely,

Debora D. Amber, Graduate Assistant

Ryan M. Foor, Ph.D., Assistant Professor
Appendix D: Initial Contact Correspondence

February 6, 2012

Title First Name Last Name
School Name
Address
City, State Zip

Greetings Title Last Name:

You have been identified as a Career and Technical Education Administrator for a district with one or more agricultural education program(s) in the state of Arizona.

In a few days you will receive a request to complete an electronic questionnaire regarding your leadership self-efficacy in identifying quality program standards for the agricultural education programs in your district. Leadership self-efficacy is one’s belief in their ability to set direction, gaining followers’ commitment, and overcoming obstacles to change.

The email will direct you to a link to access your survey at which time, Illume will validate your credentials before admitting you to the survey. Illume uses secure https connections with 128-bit encryption and signed SSL certificates all in an effort to insure your privacy and anonymity for this study.

We ask that you fill out the entire questionnaire at your earliest convenience and submit it by February 20, 2012.

This research project will provide important information about agricultural education programs within Arizona and your participation is invaluable.

Yours in quality education,

Debora D. Amber
Graduate Assistant

Ryan M. Foor, Ph. D.
Assistant Professor

P. S. We understand how very busy you are and have enclosed a small token of appreciation as a way of saying thank you.
Appendix E: Questionnaire Cover Letter

Dear Administrator [UserData:LASTNAME],

As we strive to improve Career and Technical Education in Arizona, it is critical that we support research endeavors that further this shared vision of the educational future of our state. Research is a key component of our efforts to provide more opportunities for Arizona students to excel in educational and workforce environments and to provide instructional leadership for educators in the career and technical arena.

In working toward that goal of supporting the effort of researchers in our state, I urge you to assist University of Arizona College of Agriculture and Life Science’s undertaking to explore the perceptions of career and technical secondary administrators in the state. This guided research is intended to help equip administrators with the tools they need to assist educators in meeting the high accountability standards and performance measures mandated by Perkins IV and No Child Left Behind legislation.

The questionnaire will take approximately 30 minutes to complete and can be accessed by clicking on this link: [SurveyURL:questionnaire]. There are no known risks to your participation in completing this questionnaire. Your participation is voluntary. If you decide to stop participating in the study, there will be no penalty to you, and you will not lose any benefits to which you are otherwise entitled. Your decision will not affect your future relationship with The University of Arizona. There is no cost to you except your time. Your results will be kept confidential; your name will not be associated with your responses.

Please complete the linked questionnaire, and submit it by Friday, February 24, 2012. All answers to this questionnaire are completely anonymous. There is no identification number of any kind on the questionnaire.

If you choose to participate in this study, you may discontinue participation at any time without penalty or loss of benefits. By participating in the study, you do not give up any personal legal rights you may have as a participant in this study.

If you have questions concerning your rights as a pilot study research subject, you may call The University of Arizona Human Subjects Protection Program at (520) 626-6721.

I ask that each of you take a few minutes of your valuable time to support this important research by completing the questionnaire. Completing this questionnaire implies that you are giving permission for the investigator to use your responses for research purposes. For questions, concerns, or complaints about the study you may contact Debora Amber at (520) 241-2234 or ddamber@email.arizona.edu.

Thank you for your prompt attention in this matter,

Debora D. Amber, Graduate Assistant

Ryan M. Foor, Ph. D., Assistant Professor
Appendix F: Instrument

(Scan instrument to include here)
Appendix G: Second Email

Earlier last week, you received an email from me requesting your participation in a study for the University of Arizona, College of Agriculture and Life Sciences because you are a CTE administrator in a district that has one or more agricultural education program(s). This study helps provide important information about Career and Technical Education programs in Arizona and your participation is invaluable. Please take a few minutes to complete this {SurveyURL:questionnaire} thinking about your districts agricultural education program and submit it by February 24, 2012 or at your earliest convenience. If you have already completed and submitted the questionnaire, thank you for your time and effort.

Sincerely,

Debora D. Amber, Graduate Assistant

Ryan M. Foor, Ph.D., Assistant Professor
Appendix H: Final Contact

Dear Administrator {UserData:LASTNAME}:

During the last few weeks we have sent you mailings about an important research study we are conducting at The University of Arizona. If you have already completed this questionnaire about Arizona CTE administrators and submitted it, please disregard the rest of this email and accept our sincere thanks for your efforts.

The purpose of the study is to help understand more about CTE administrators capability to evaluate the quality of agricultural education programs in Arizona.

The study is drawing to a close, and this is the last contact that will be made. We are sending this final contact because of our concern that people who have not responded may have different perceptions than those who have. Hearing from everyone in this census helps assure that the survey results are as accurate as possible. By clicking on this {SurveyURL:questionnaire} link, you will be directed to the questionnaire which will take no more than 30 minutes to complete. This opportunity will end Friday, March 9, 2012 at midnight.

We also want to assure you that your response to this study is voluntary, and if you prefer not to respond that is fine. If you are not a CTE administrator with an agricultural education program in Arizona and you feel that we have made a mistake including you in this study, please let us know by returning the initial letter with a note indicating so. This would be very helpful.

Finally, we appreciate your willingness to consider our request as we conclude this effort to better understand CTE administrators in Arizona.

Thank you very much,

Debora D. Amber, Graduate Assistant

Ryan M. Foor, Ph. D., Assistant Professor