THE PERCEPTIONS HELD BY FFA MEMBERS OF EMPLOYABILITY SKILL DEVELOPMENT ASSOCIATED WITH AGRICULTURE CAREER DEVELOPMENT EVENTS

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by
DEANNA SUE BOARDMAN

Dr. Bryan L. Garton, Thesis Supervisor

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The undersigned, appointed by the Dean of the Graduate School, have examined the thesis entitled

THE PERCEPTIONS HELD BY FFA MEMBERS OF EMPLOYABILITY SKILL DEVELOPMENT ASSOCIATED WITH AGRICULTURE CAREER DEVELOPMENT EVENTS

Presented by Deanna Boardman

A candidate for the degree of Master of Science

And here by certify that in their opinion it is worthy of acceptance.

_____

Professor Bryan Garton

_____

Professor Robert Torres

_____

Professor David Trinklein

DEDICATION

I would like to thank my wonderful parents, Barb and Danny Boardman, who have provided tremendous support throughout my college career, but especially on my thesis! My parents continuously asked me from the start of my thesis about my progress. My father would always ask me when it would be done so he could read it. Well, now he finally read it! I would also like to thank the rest of my family and friends whose encouragement has been great motivation for academic success

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ABSTRACT

Career Development Events (CDEs) are competitive contests organized as an intracurricular component of secondary agriculture programs to provide students with real-world situations to help bridge the gap between attending school and entering the workforce. Most learning objectives of CDEs focus on the technical knowledge and skills which can be measured by performance. It is unknown if participation in CDEs contributes to the development of employability skills highly desired in the workplace. Therefore, the objective of this study was to assess the contribution of participating in CDEs to the development of employability skills, as perceived by participants. All participants of three selected CDEs at the Missouri state competition were provided with a questionnaire which asked them to rate the contribution of participating in their respective CDE to the development of associated employability skills. The contribution to the development of employability skills were established collectively and among characteristics (gender and academic level) for each CDE. Performance was also established among characteristics (gender, academic level and enrollment in a subject related course). The findings provide support for the personal growth and development of participants in the selected CDEs. Ultimately, this study indicates that CDEs, not only strengthens participants' technical knowledge, but also enhances employability skills highly desired in the workplace.

CHAPTER I

INTRODUCTION

Thesis Overview

This thesis consists of five chapters. Chapter I, *Introduction,* describes the skills needed in the workplace and the challenges faced by high school graduates to meet employers' demands. It further describes solutions to the lack of preparation with real world learning activities provided by the secondary education system. Chapter II, *Review of Literature,* provides a review of literature related to employability skills needed in the workplace and explains the conceptual framework for the study. Chapter III, *Methodology,* includes a description of the research methods, instrumentation, sampling procedures, data collection and statistical analysis. Chapter IV, *Findings*, provides the data and statistical analysis for each research objective. Finally, Chapter V, *Summary, Conclusions, Implications and Recommendations,* describes the findings of the study and implications to the data collected.

Background and Setting

Upon graduation, high school students overall, lack the necessary skills and preparation to meet the demands of the workforce (Levine, 2007). As technology and business change to an increased global market, students have to learn how to take advantage of not only their resources, but also their individual skills to be successful in

their chosen careers. Hofstrand (1996) and Robinson (2000) stated that transferable, employability skills are desired now more than ever by employers and should assist every single person entering the workforce.

In the past, the high school curriculum has focused on traditional academic subject areas such as science, math, history, and language arts (Levine, 2007). However, such focus areas have become outdated in comparison to the skill set needed by young adults entering the workforce claims Bancino and Zevalkink (2007). They further explain "this [technical] curriculum is critical to their success, and yet the fast-paced, global marketplace of today is demanding more" (Bancino & Zevalkink, 2007, p. 20). Evers, Rush and Berdrow (1998) emphasized to meet this demand, the educational system needs to provide strong technical curriculum, but incorporate a program of study that strengthens personal skills as well. Wellington (2005) concluded, students who have strong personal skills and utilize these attributes from a young age, will have a tremendous advantage over their peers.

Employers are now setting their highest priority on finding employees with not only the technical knowledge but also employability skills. As a result, the future career of every high school student will be affected by the demand for strong employability skills, commonly known as "soft skills" (Levine, 2007). "Soft," "personal," "applied," "21st century," "general," and "transferable" are terms often used synonymously with employability skills. Peggy Klaus (2007), author of *The Hard Truth about Soft Skills* described soft skills as:

> Personal, social, communication, and self management behaviors. While hard skills refer to the technical ability and the factual knowledge needed

> to do the job, soft skills allow you to more effectively use your technical abilities and knowledge (p. 2).

Avery and Avery (2000), Gewertz (2007), Jusko (2006), and Levine (2007), agreed that soft skills should be learned and developed throughout students' primary and secondary education. Students could better understand soft skills by using realistic scenarios to demonstrate their importance (Bancino & Zevalkink, 2007). Practice through engaged learning helps to take the "experience and turn it into a learned behavior," claimed Bancino and Zevalkink (2007, p. 22). However, some students dislike practicing soft skills in a realistic situation, such as giving a presentation (Avery & Avery, 2000). Larry Davis, President of Daman Products Co. Inc. posed a solution to this problem in an interview with Jill Jusko of Industry Week. Davis suggested:

> Bring them together and teach those soft skills around a tangible problem so that as they're learning these new skills, they're not even aware they're learning them. If you can get schools to that level where everybody is engaged in what's going on, and learning is almost an afterthought, that would be pretty powerful (p. 14).

On the other hand, teaching that does not engage students can lead to passive learners whose "habit of cognitive inactivity can lead to mediocre performance in college and later on in their careers," emphasized Levine (2007, p. 19). This is why Levine (2007) insisted that high school teachers should continually question and provide critical thinking exercises to keep students mentally on their toes. Levine (2007) further explained "active thinking is habit forming, so such ignited thought processes can start in one area of affinity and spread to formal curricular domains" (p. 20). Bob Pearlman, the director of strategic planning for the New Technology Foundation, agreed with Levine

and stated, "For kids to master 21st century skills, you need a system which embeds the skills in the projects they do, and they need to be assessed on them" (Gewertz, 2007, p. 26).

Finding employees with technical knowledge and strong employability skills can be a valuable asset to a company. Therefore, to have young adults learn employability skills from their primary and secondary education is very beneficial to companies to keep training needs and costs minimal. However, selecting the right people for employment poses a difficult task to employers because "interviews are to predict whether people, who more often than not are complete strangers, are likely to meet the criteria for effective performance of jobs," stated York (1995, p. 78). To find qualified employees, York (1995) identified four areas of potential competencies for interviewers to base their selection, which focus on employability skills:

1. Vocational, professional – the ability to perform effectively the tasks of the jobs.
2. Interpersonal – the ability to relate co-operatively and harmoniously with work colleagues and clients.
3. Organizational – the ability to adapt to the culture of the employing organization and to fit successfully into its ways.
4. Developmental – the capacity to learn, to develop abilities, to improve performance, to accept increased responsibilities and to become of increasing value to the employer.

Career World (2007) found that 87% of teens claimed they are prepared to enter the workforce, but employers disagree. A few years down the road, many high school students agreed that they were ill prepared for the monumental step of entering the work force (Levine, 2007). Levine (2007) further explained that in a recent poll, "approximately 40% of recent graduates reported key gaps in their preparation" (p.17).

Employability skills are a very difficult skill set to learn as a student worker due to most positions available to teenagers tend to be less formal (Career World, 2007). Therefore, a significant portion of the preparation needs to come from a student's educational experience. Luzzo (2007) addressed preparation need by stating:

> The best way to narrow this [preparation] gap is for young people to grab on to opportunities to learn about and develop those [employability] skills. Start by getting involved in school clubs, teams, or community service organizations and working your way toward leadership roles (p. 7).

Therefore, students need to be encouraged to utilize opportunities that directly and indirectly develop their employability skills and narrow the preparation gap.

High school is a time when young adults are preparing themselves for their future. While high schools have established requirements for graduation, students are also allowed to partake in elective courses for credit (Nerison-Low, 1994). Elective courses allow students to choose among many alternatives which may include foreign languages, performing arts, business education or career and technical areas. High schools offer a wide range of electives so that students may pursue career interests and develop talents (Nerison-Low, 1994). Courses offered by the agricultural education program are career and technical electives. These courses are career specific and involve practical activities for a student to gain work experience. Involvement in career oriented organizations and specialized career courses, provide students with the opportunity to develop their employability and technical skills for their chosen field. Employers are looking for workers with experience in "interpersonal, organizational and customer service skills," stated Roberts (2000, p. 27). Career oriented courses and organizations provide a fabulous opportunity to develop soft skills to get an entry level job.

Agricultural education programs offer career oriented courses dedicated to the education of youth on various aspects of agricultural science. Each secondary agriculture program sponsors an FFA chapter with the purpose "to promote premier leadership, personal growth and career success" declares the National FFA Organization (2007). Students achieve success in agriculture from the guidance of an agricultural educator that integrates instruction with hands-on learning and essential learning activities.

A secondary agriculture program is built on three core areas of learning which include 1) classroom/laboratory instruction, 2) supervised agricultural experience, and 3) leadership and personal development (National FFA Organization, 2007). Each area provides a unique method of educating students on agriculture through various hands-on experiences. Career Development Events (CDEs) are competitive contests that focus on preparing a participant for their future career in a technical field of agriculture and developing employability skills critical to career success. CDEs are a part of the leadership and personal development area of learning in agricultural education (National FFA Organization, 2007).

CDEs were created by the National FFA Organization to develop technical knowledge and skills of participants to bridge the gap between graduating high school and entering the workforce (National FFA Organization, 2007). Robinson (2006) stated that "the need to improve the employability skills of the workforce has been an issue across all phases of education" (p. 4). The National FFA Organization has taken steps to improve the employability skills of participants by "providing meaningful connections

between classroom instruction and real life professional scenarios" (National FFA Organization, 2007).

CDEs are designed to improve the technical knowledge and employability skills of participants (National FFA Organization). Skills gained by CDE participation can be very useful when graduates move to the next stage in their life. Most students will have made plans to continue their education or enter the workforce and participation in CDEs has already built upon many critical employability skills needed for success. Not only does participation contribute to experience in a technical field of agriculture, it also provides the opportunity to build upon employability skills highly desired in the workforce.

Theoretical Framework

Dunkin and Biddle (1974) designed a model for the study of teaching and learning. This model was modified from an original model proposed by Mitzel in 1960. The modified model created by Dunkin and Biddle, was developed to identify the essential variables of teaching and learning relationships. The model was designed to increase understanding of the variables of teaching and ultimately teaching effectiveness.

Mitzel's original model presented three variables for the study of teaching and learning. These variables included teachers and pupil, their interactions and the product of their interactions. Dunkin and Biddle (1974) expanded Mitzel's model and presented four variables. These variables include presage, context, process, and product (see Figure 1).

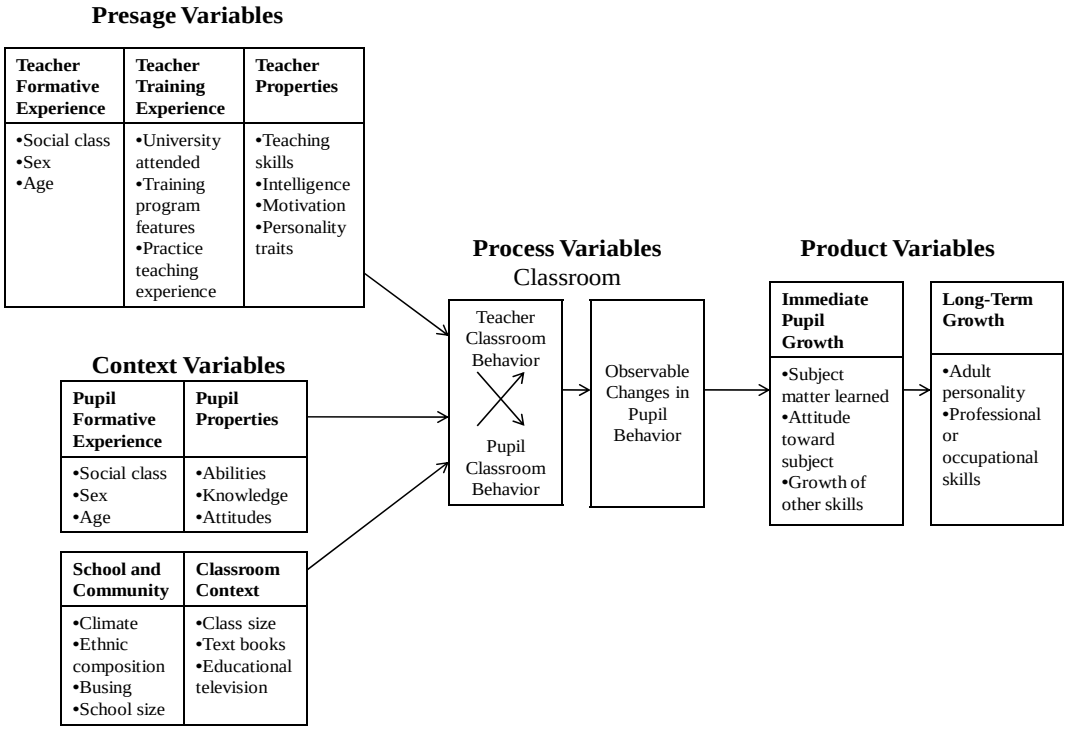

Figure 1

The Study of Teaching and Learning (Dunkin and Biddle, 1974)

Presage variables are brought to the teaching experience from the teacher (Dunking & Biddle, 1974). These variables have already been developed by genetic aptitude and environmental influences and consist of three further divided categories: 1) formative, 2) experiential and 3) properties. These categories produce a linear effect from the first to the third and can predict teaching behavior.

Context variables are brought to the classroom before the teaching and learning takes place, by the pupil (Dunkin & Biddle, 1974). Dunkin and Biddle (1974) determined two categories of context variables, 1) pupil and 2) school and community. Each of the

two categories of context variables is further divided into two sub-categories. Therefore, the pupil context variable is affected by a) formative experiences and b) pupil properties, while the school and community context variable is affected by a) school and community and b) classroom contexts. The linear effects of the sub-categories have a direct influence on pupil classroom behavior.

The presage and context variables have little to no effect on each other before the teaching and learning takes place. However, once the teaching and learning takes place, the process variable is the classroom interaction of the two previous variables which leads to observable changes in pupil behavior (Dunkin & Biddle, 1974). An example of the process variable would be the student answering a question (pupil classroom behavior), the teacher responding with positive feedback (teacher classroom behavior), resulting in student confidence to answer following questions (observable changes in pupil behavior). The term "classroom" for this variable represents any learning environment with a set of objectives to be accomplished, such as Career Development Events (CDEs).

Finally, product variables result in changes in the pupil behavior influenced by the three previous variables. The changes that occur with the student are classified as immediate pupil growth and long-term pupil effects. These changes include knowledge gained, attitudes altered, and improvement of skills (Dunkin & Biddle, 1974).

Later models have been developed to include additional influences to teaching and learning along with two way arrows to describe the relationship between variables

and categories. These additions display influences having less of a linear influence from the presage and context variables to the product variables.

For the purpose of this study, advisors of participants were referred as the presage variable. Participants of the CDEs were referred to as the context variables. The CDE was referred to as the process variable. The immediate and long term outcomes of the participants' involvement in the CDE are referred to as the product variable. This study asked participants (context variable) to assess the contribution of the CDE (process variable) to the development of employability skills (product variable).

Statement of the Problem

Career Development Events (CDEs) are designed to "prepare students for careers in agriculture" by applying what students have learned in the classroom with experience in practical scenarios through competitive intracurricular activities (National FFA Organization, 2007). The learning objectives of CDEs focus on the technical knowledge and skills that are developed through participation in the activities. However, it is unknown if participation in CDEs contribute to the development of employability skills highly desired in the workplace. Therefore, an assessment is needed to determine the contribution of CDE participation toward development of employability skills.

Upon conducting a literature review, certain questions arose. What employability skills can be enhanced by participating in selected CDEs? Does individual performance at the state level of selected CDEs correlate with the development of employability skills as perceived by the participant? How does previous enrollment in subject related courses to

the CDE contribute to the success of the participant at the state level of the selected CDE?

Need for the Study

Students enrolled in an agriculture course are able to compete in Career Development Events (CDEs) which test students on their knowledge and abilities in one of 23 different fields of agriculture (National FFA Organization, 2007). These events are intracurricular activities designed to build employability skills and develop career interests. However, there is a lack of research or evidence identifying which employability skills may be developed through participation in CDEs. Therefore, a need exists to determine the contribution of participation in CDEs to the development of the student's employability skills.

Information acquired from this study can be shared with teachers and other stakeholders interested to see the contribution of participation in a CDE to the development of a participant's personal growth. Participants can also use the results of this study to demonstrate to future employers the exact personal skills that were acquired through participation.

Purpose

The purpose of this study was to assess the contribution of secondary agriculture students' participation in selected Career Development Events (CDEs) toward the development of employability skills. The study sought to assess the participants'

perceptions regarding level of contribution to their development of identified employability skills. To provide direction to the study, the following objectives were developed.

Objectives

1. Describe the characteristics (gender, academic level, plans following graduation) of participants.
2. Describe the contribution of participating in selected CDEs toward the development of employability skills, as perceived by participants.
3. Compare the contribution that participation in selected CDEs to the development of employability skills by selected characteristics.
4. Describe the relationship between the contribution of participating in CDEs toward the development of employability skills and a participant's performance at the state level competition.
5. Compare the performance of participants in each CDE by selected characteristics.

Definitions

Career Development Event: Competition designed to prepare students for careers in agriculture by testing the abilities of individuals and teams in 23 major areas of agriculture, food, fiber, and natural resources sector (National FFA Organization, 2006).
CDE Superintendent: Expert in the technical area of the Career Development Event who coordinates and manages the event at the state level.

Employability: "The relative chances of acquiring and maintaining different kinds of employment" (Brown et al., 2003, p. 111).

Employability Skills: "Transferable core skill groups that represent essential functional and enabling knowledge, skills, and attitudes required by the 21st century workplace… necessary for career success at all levels of employment and for all levels of education" (Overtoom, 2000, p. 2).

Intracurricular Activity: School activity that is part of the curriculum.

Basic Assumptions

1. Participants of the selected CDEs objectively reported how their participation contributed to the development of employability skills.

Limitations

1. The study was limited to participants of purposefully selected CDEs at the state level. These CDEs include agricultural sales, horse evaluation, and forestry.
2. Time and resources limited the study to three of the fifteen agriculture CDEs conducted at the state level in Missouri.
3. This study cannot ensure representation of all participants of the CDE.

CHAPTER II

REVIEW OF LITERATURE

This chapter presents a review of literature relating to the need for high school graduates to poses employability skills. The chapter will be divided into four sections. The first section sets the stage for the importance of employability skills in the workplace. The second section describes the struggles and expectations for new graduates to discover their role in the workforce. The third section addresses the efforts secondary education is taking to instill strong technical and employability skills in graduates to meet the demands of employers. The fourth section looks specifically at the experiences and activities provided by agricultural education to strengthen the skills of students.

Importance of Employability Skills in the Workplace

In the past several decades the average workplace has developed into a booming global market. Tucker (2007) claimed this change has occurred significantly due to technological advances, but in addition, other countries are providing better educational systems for their citizens. Nearly a half a century ago, the United States led the world in the percent of adults who had received high school diplomas and had attended college. These numbers have since decreased and continue to fall (Organization for Economic Co-operation and Development, 2006). This leads us to a defining question for our society.

How can the American workforce contend in the global market against workers who offer exceptional skills for lower wages? Tucker (2007) declared that the United States must offer a world class education system that yields the utmost qualified and innovative workers to excel above the competition. To do so, the education system must strengthen the technical and employability skills of graduates that are desired by employers.

Billing (2003) stated that the employability skills most desired by employers were those that were transferable to a variety of situations; specifically the skills of "problem solving, communication, teamwork, and critical thinking…" (p. 335). A study conducted by Casner-Lotto and Barrington (2006, p. 49) identified skills that employers found "crucial to success in the workplace." The study recognized that employability skills were the most valued skills for employees according to employers. Casner-Lotto and Barrington (2006) also established a ranking of knowledge and skills most desired by employers. These skills included: 1) critical thinking/problem solving, 2) information technology application, 3) teamwork/collaboration 4) creativity/innovation, 5) diversity and 6) leadership. Evers et al. (1998) conducted a study of college graduates entering the workforce, where the researchers not only wanted to establish which employability skills were needed in the workplace, but also the competence level of graduates for each skill. Through a two phase survey completed by 442 graduates and 213 managers of twenty-seven corporations, 67 employability skills in 18 constructs (see Table 1) were established as skills graduates need to possess in the workforce.

Table 1

Employability Skills Constructs Graduates Need to Possess (Evers, 1998)

	Constructs
1.	Problem-solving/analytic
2.	Decision-making
3.	Planning and organizing
4.	Personal organization/time management
5.	Risk-taking skills
6.	Oral communication
7.	Written communication
8.	Listening
9.	Interpersonal skills
10.	Managing conflict
11.	Leadership/influence
12.	Coordinating
13.	Creativity/innovation/change
14.	Visioning
15.	Ability to conceptualize
16.	Learning skills
17.	Personal skills
18.	Technical skills

High School Graduates Entering the Workforce

The need for sound employability skills has evolved in conjunction with the growing global market. With both having a huge impact on industry in the 21st century, individuals must realize the benefit of possessing strong employability skills to be competitive in the workplace. Brown (2003) emphasized this is especially true for high

school graduates who must compete for entry-level positions against adults with more experience. Upon seeking employment, graduates quickly realize that they are only a small portion of the people looking for work positions (Brown, 2003). The Bureau of Labor Statistics (2004) reported of approximately three million graduates each year, 44% enter the workforce within twelve months. These statistics imply that over a million young adults are added to the workforce each year. However, in a tight economy, a million new jobs are not created each year to meet the demand for graduates. Therefore, to be able to compete for employment, graduates need to come into the workforce with developed skills desired by the industry.

In a study conducted by Partnership for 21st Century Skills, managers of 400 leading corporations were surveyed on their perception of high school graduates entering the workforce. The results found 70% of managers perceived graduates as lacking the professional skills which the corporations desired (Bronson, 2007). With this lack of professionalism, what skills do graduates need to stand above the competition? Beard (2001) responded:

> The most sought after employees are those who communicate effectively, continue to stay current with modern technology, and work successfully as individuals and as team members. Students with these skills and abilities are competitive in the job market, receive financial rewards and are selected for advancement (p. 17).

The National Association of Colleges and Employers (2000) conducted a study to support Beards conclusions. This study asked employers to rate skills they looked for in new hires. The results of the study showed six of the top seven skills desired by

employers as being employability skills (see Table 2). The same study also presented the top ten employability skills that employers look for in a potential hire (see Table 3).

Table 2

Top Seven New Hire Skills (National Association of Colleges and Employers, 2000)

New hire skills
1. Interpersonal
2. Teamwork
3. Verbal communication
4. Analytical
5. Computer
6. Written communication
7. Leadership

Table 3

Top Ten Personal Qualities Employers Seek (National Association of Colleges and Employers, 2000)

Personal qualities	
1. Communication skills	6. Interpersonal skills
2. Motivation/initiative	7. Flexibility/adaptability
3. Teamwork skills	8. Technical skills
4. Leadership skills	9. Honesty/integrity
5. Academic achievement/GPA	10. *Work ethic
	*Analytical/problem solving

Note: * Tie

Focus on Secondary Education

For American workers to compete on a global level, the business community is looking to the educational system to develop not only the technical skills of students, but

also essential employability skills (Reese, 2002). So, to what extent can employability skills be taught by the educational system? Bronson (2007) put an emphasis on schools to present students with real world scenarios followed by reflection of the individual benefit from the experience. More technical minded students will be able to relate and understand the theories behind employability skills by using realistic scenarios to demonstrate their importance (Bancino & Zevalkink, 2007). Practice through engaged learning helps to take the "experience and turn it into a learned behavior," claims Bancino & Zevalkink (2007, p. 22). Teachers should encourage independence on solving problems through engaged learning but also "provide guidance [for students] to better handle situations that parallel routine workplace challenges," states Bronson (2007, p. 30). Providing this type of learning environment will resemble real world situations for developing employability skills and promote life-long learning (Bronson 2007).

Nerison-Low (1994) suggests high school elective courses allow students real world experience and the freedom to choose among many alternatives to pursue professional interests and develop talents. The number and type of elective courses varies from each school, but is usually determined by the state and local graduation requirements (Nerison-Low, 1994). Possible elective course areas and associated courses are presented in Table 4.

Many elective courses offered by high schools are considered as career and technical education (CTE) (Alfeld et al., 2000). The focus of CTE courses is to involve students in practical activities to gain work experience. Involvement in specialized career

Table 4

Elective areas and courses

Elective areas	Elective course examples
1. Visual arts	Painting, drawing, sculpture, photography
2. Performing arts	Choir, dance, film, drama, band
3. Vocational education	Woodworking, automobile repair, agriculture
4. Computer science/business	Graphic design, word processing, programming
5. Journalism/publishing	School newspaper, yearbook, television production
6. Foreign languages	Spanish, French, German, Greek, Latin, Chinese
7. Family and Consumer science	Child and human development, home economics
8. Health education	Nursing, nutrition, emergency medical training

courses, provide students with the opportunity to develop their employability and technical skills for a promising future in their chosen field (Reese, 2003). Many CTE areas also include career and technical student organizations (CTSOs) which assist students to further explore career paths in their field of interest and strengthen personal skills by taking on leadership roles (Reese, 2003).

There are currently eight CTSOs recognized by the U.S. Department of Education (see Table 5). According to Alfeld et al (2000), CTSOs have many beneficial activities such as “skills contests, community service, and leadership development to improve the members’ leadership skills, career and technical knowledge and skills, personal characteristics, and employability skills.” (p. 2) In a study conducted by Alfeld et al. (2000) for the National Research Center for Career and Technical Education, a positive relationship was found between the participation of students in CTSO activities and

higher academic motivation, academic engagement, grades, career self-efficacy, college aspirations, and employability skills. This study additionally concluded professional development and competitive activities have positive influence on employability skills.

Table 5

Career and Technical School Organizations (Alfeld, 2000)

CTSO	Current Name	Career & Technical Education Area
BPA	Business Professionals of America	Business Education
DECA	Distributive Education Clubs of America	Marketing Education
FBLA	Future Business Leaders of America	Business Education
FCCLA	Family, Career and Community Leaders of America	Family and Consumer Sciences
FFA	National FFA Organization	Agricultural Education
HOSA	Health Occupations Students of America	Health Occupations
SkillsUSA	SkillsUSA	Trade, Industrial, and Health Occupations Education
TSA	Technology Students of America	Technology Education

Agricultural Education

With the need for strong employability skills in high school graduates, agricultural education, a CTE program, is providing students with increased opportunities for personal and career development. “Learning by doing” has long been a motto of agricultural education, stressing to students the “importance of experiences outside the formal classroom,” stated Connors and Mundt (2001, p. 6). They continued to explain, with insufficient employability skills being the “number one barrier to career success”, it is important agricultural education strives to develop these skills (p. 6).

The National FFA Organization (2007) emphasizes the central focus of agricultural education is to promote leadership development, personal growth, and career success. Students can capitalize on their development by participating in activities such as Career Development Events (CDEs) provided by the agricultural education program. CDEs are competitive contests that focus on preparing a participant for their future career in a technical field of agriculture while developing employability skills critical to career success. Lockaby, Akers, and Karr (2001) described CDEs as a "compliment to regular classroom instruction" which "test skills and knowledge of individuals or teams in the major areas of agricultural instruction and leadership" (p. 21). This intracurricular activity is a part of the curriculum that allows students to take what they have learned from their instruction and apply it in real world scenarios. Learning experiences that take place outside of the classroom in a more non-traditional classroom setting, such as CDEs, help to smooth the transition for students entering the workforce (Connors & Mundt, 2001).

What sets the CDE learning experience apart from traditional teaching methods? Touchstone, Dygert, and Blackstock (2001) identified three commonly used learning procedures associated with each CDE, which further develop skills for career success:

> *Objectives:* Career Development Events have well established rules, explanations and rubrics that outline the objectives and purpose of the event. These objectives set out what is expected of the FFA members to learn.
> *Procedure:* Through practice and individual study, students discover areas where their expertise is limited, and then through work with their resources….they discover and fill in holes in their knowledge. This practice and discovery method allows students to better comprehend the information with which they are concerned.

> *Assessment:* Honest personal and team evaluation allows students to learn from their mistakes and identify weaknesses in preparation that needed to rectified prior to future competition (p. 8-9).

Although it is clear that the purpose of CDEs is to promote leadership development, personal growth, and career success, it is still undetermined exactly what skills develop for students who participate in these events. Therefore, a need exists to identify the skills that are developed from participation in selected CDEs and the level of contribution to the development of these skills.

Summary

Providing high school students with an education that balances both technical and employability skills is critical to meet the demands of the workplace. The workplace continues move toward a more global market requiring workers to excel above the competition by increasing their knowledge and skills. Employers indicate the skills highest in demand focus on employability skills and include critical thinking/problem solving, information technology application, teamwork/collaboration, creativity/innovation, diversity and leadership (Casner-Lotto and Barrington, 2006). A large portion of employers indicate high school graduates do not possess these necessary skill set to be successful in the workplace (Career World, 2007). Now emphasis has been placed on secondary education to incorporate a curriculum with real world scenarios to strengthen both technical and employability skills. Agricultural education is taking action providing students with increased opportunities for personal and career development by incorporating activities outside of the classroom into the curriculum such as Career

Development Events. This intracurricular activity allows students to take what they have learned from their instruction and apply it in real world scenarios helping to smooth the transition into the workforce (Connors & Mundt, 2001).

CHAPTER III

METHODOLOGY

Chapter III describes the methodology used to conduct the study. Topics addressed in this chapter including the purpose, objectives, research design, population and sample, instrumentation, validity and reliability, data collection procedures, and data analysis.

Purpose

The purpose of this study was to assess the contribution of secondary agriculture students' participation in selected Career Development Events (CDEs) toward the development of employability skills. The study sought to assess the participants' perceptions regarding level of contribution to their development of identified employability skills. To provide direction to the study, the following objectives were developed.

Objectives

1. Describe the characteristics (gender, academic level and plans following graduation) of participants.
2. Describe the contribution of participating in selected CDEs toward the development of employability skills, as perceived by participants.

3. Compare the contribution that participation in selected CDEs had to the development of employability skills by selected characteristics.
4. Describe the relationship between the contribution of participating in CDEs toward the development of employability skills and a participant's performance at the state level competition.
5. Compare the performance of participants in each CDE by selected characteristics.

Research Design

The design of this study was correlation research which aims to explore the relationship between characteristics (Ary, Jacobs, Razavieh & Sorenson, 2006). "Specifically, it investigates how scores on one or more variables rise and fall as scores on other variables rise or fall" claimed Ary, et al (2006). This correlational used a survey to collect data on the participants. Gall, Gall and Borg (2003) stated that the purpose of a survey is to "use questionnaires or interviews to collect date from a sample that has been selected to represent a population to which the findings of the data analysis can be generalized" (p. 223). This study provided the participants with the opportunity to assess their own personal growth based on their participation in a CDE by completing a questionnaire. The end sought for this study was that particular employability skills are acquired or enhanced with participation in a selected CDE.

Population

The population for this study was participants qualifying for state competition in three selected agriculture Career Development Events (CDEs) in the state of Missouri for the 2007-2008 academic year. Three CDEs were selected by the researcher which supported the development of the most employability skills to accomplish the objectives of the event. The determination was made through the creation of a table with the 15 agriculture CDEs cross-walked with the 67 employability skills critical to career success as determined by Evers et al. (1998). Referring to the objectives and components of each CDE (see Appendix F), the researcher marked the employability skills associated with each of the 15 agricultural CDEs (see Appendix A). Three CDEs supporting the development of the most employability skills were selected for the study: agricultural sales, forestry and horse evaluation.

The frame for participants was obtained from the University of Missouri's Agricultural Education Department, which coordinated the state CDEs. Selection and frame error did not occur with this survey because the Agricultural Education Department had accurate records of the FFA members who were to compete in the selected CDEs at the state level.

Each of the selected CDEs had varying number of participants anticipated to compete at the state level. Agricultural sales accepted 24 teams of four individuals totaling 96 potential participants. Horse evaluation accepted 48 teams of four individuals totaling 192 potential participants. Forestry accepted 36 teams of four individuals totaling 144 potential participants.

The final population consisted of 402 participants involved in the three selected CDEs at the state level competition. The population was divided by CDE with agricultural sales having 90 participants, forestry having 130 participants and horse evaluation having 182 participants. The accepting sample consisted of 355 (88%) participants who completed the questionnaire. The accepting sample divided by CDE included 90 (100%) participants in agricultural sales, 117 (90%) participants in forestry and 148 (81.3%) participants in horse evaluation. Approximately 12% of participants did not complete the questionnaire for two presumed reasons: the participant was under the age of 18 and did not attain a signed parental consent form or the participant independently chose not to complete the questionnaire.

Instrumentation

A need existed to analyze the data from each Career Development Event (CDE) separately due to different employability skills associated with each CDE. As a result, a separate questionnaire was developed for each of the three selected CDEs. The three questionnaires consisted of two parts. Part I was modified from an original instrument constructed by Robinson (2006) that questioned college students on 67 employability skills critical to career success. These employability skills were grouped together by common themes, known as constructs. From the 67 employability skills in 18 constructs, the researcher selected the skills associated with the objectives of the CDE (See Appendix A). The selected employability skills were then verified by each state CDE superintendent who had extensive experience with the event.

Of the selected skills, only nine constructs were used for the agricultural sales instrument and eight for the forestry and horse evaluation instruments. Part I of this study measured the self-perceived contribution of participating in the CDE to the development of employability skills. The response scale of the questionnaire for contribution of participating in the CDE to the development of employability skills was the following:

0 – No Contribution

1 – Minor Contribution

2 – Moderate Contribution

3 – Major Contribution

4 – Extreme Contribution

Part II of the questionnaire consisted of five close-ended characteristic questions. Answers to these questions were used to compare the characteristics with the perceived development of employability skills from Part I. In addition, participants were asked to provide their contestant letter/number and school name at the top of the questionnaire.

Validity and Reliability

Validity is defined by Ary, Jacobs and Razavieh (2002) as the ability of a survey instrument or technique to measure what it purports to measure. The focus of validity is accuracy of the instrument (Ary, Jacobs & Razavieh, 2002). Validity was established by a review conducted by professors and administrators at the University of Missouri who addressed face and content validity.

Not only does an instrument have to be valid, it also needs to be reliable. Ruane (2005, p. 66) declared, “a measure is considered reliable if it yields the same results each time it is used, assuming, of course, that there’s been no real change in the variable being measured.” In other words, when responses have a high rate of repeatability, the consistency of the results are deemed reliable.

Once the questionnaire was checked for precision, reliability was established through a pilot test. The pilot test was conducted with 14 participants of the agricultural sales CDE competing at Missouri’s South Central district CDE competition. Upon analysis of assessment, a Cronbach’s alpha of .97 was established for questions on the contribution to employability skills, indicating internal consistency. A Cronbach’s alpha was not established for the close-ended characteristic questions of participants because this is static data, which is not likely to change for an individual.

Data Collection Procedures

According to the Campus Institutional Review Board (Campus IRB) (2007) at the University of Missouri, “prospective review and approval authority applies to all human subject research activities conducted under the jurisdiction of the University of Missouri-Columbia” (p. 2) Therefore, approval by the Campus IRB had to be attained for this study to ensure the rights and welfare of participants were protected (IRB, 2007). Campus IRB approval was granted for this study, IRB# 1111617 on April 4, 2008.

The state competition for Missouri took place on April 17th and 18th, 2008 at the University of Missouri. Approximately two weeks prior to the state competition, an email

was sent to all advisors of state bound agricultural sales, forestry and horse evaluation CDE teams (see Appendix B). The email had three purposes: 1) to congratulate their team for qualifying for the 2008 CDE competition, 2) to alert the participants and advisor of the purpose of the study and the forthcoming questionnaire participants were asked to complete at the competition, and 3) to allow participants who were under the age of 18 to acquire parental consent on the provided parental consent form attached to the email (Appendix C). A follow up email was sent one week prior to the state competition to remind advisors to collect parental consent forms from the members of the selected CDEs (Appendix D).

Email addresses for the advisors of all 108 teams competing in the three selected CDEs were acquired through the University of Missouri's Agricultural Education Department. However, since it is possible to have more than one advisor for each agricultural education department and there was no time efficient method to establish which advisor instructed the state bound team needed in this study, emails were sent to all advisors of the department. Upon sending the emails, a total of 16 were returned and deemed undeliverable with the email address entered. With an additional attempt to locate correct email addresses through the Department of Agricultural Education only four remaining email addresses remained unattainable. Participants from the agriculture departments which had advisors who could not be reached by email were not eliminated. It is possible that another advisor from the same agriculture department received the email with the parental consent forms attached.

Each participant was identified with their questionnaire to compare the relationship of contribution to the development of employability skills and performance. Identifying each participant with their questionnaire was done by the individual providing their school name in a blank at the top of the questionnaire and then circling their individual contestant letter directly below school name.

Each CDE at the state level offers a predetermined number of teams to participate due to the limited management ability of coordinators and time for the participants to reach the objectives of each contest. As stated previously, agricultural sales accepted 24 teams, forestry accepted 36 teams and horse evaluation accepted 48 teams. Each team could have up to four members compete. At the sign in for each state competition, participants from each school were assigned a letter A, B, C, or D by CDE superintendents for individual identification. Letters were assigned alphabetically by last name for each team member. This identification method was determined prior to the contest by the CDE superintendent to identify performance with the correct participant. The assigned letter also determined which group an individual was designated to for the duration of the contest to keep group sizes manageable and prevent unethical communication between teammates. Therefore, a participant's identification was the school they were from, in conjunction with a letter for their group during the contest.

This study used the same identification method as established by the CDE superintendents to identify a completed questionnaire and performance results with a participant. Therefore, a name was never written on a questionnaire. Instead, the questionnaire asked for the school they were from and the group letter they were

designated to. The researcher then used the list created by the CDE superintendent to match the school name and group letter written on a questionnaire to each participant.

Data Analysis

The data analysis methods are described with each objective. Data were analyzed using the Statistical Package for the Social Sciences (SPSS) 16.0 for Windows. The instrument provided participants with a scale of five contribution ratings: 0, 1, 2, 3, and 4. To interpret the responses of the participants, this study established real limits for the contribution means (see Table 6).

Table 6

Real Limits for Contribution Means

Contribution value	Contribution descriptor
0.00 – 0.50	No contribution
0.51 – 1.50	Minor contribution
1.51 – 2.50	Moderate contribution
2.51 – 3.50	Major contribution
3.51 – 4.00	Extreme contribution

Research Objective One

Describe the characteristics (gender, academic level, plans following graduation) of participants.

Objective one was accomplished by analyzing the characteristic characteristics of the participants of the selected CDEs and reporting the descriptive statistics. Specifically,

frequency counts and percentages were used to describe nominal data for our characteristics.

Research Objective Two

Describe the contribution of participating in selected CDEs toward the development of employability skills, as perceived by participants.

Employability skills were summated by construct for clarity in reporting means and standard deviations. To report the data, descriptive statistics were used, including means and standard deviations.

Research Objective Three

Compare the contribution that participation in selected CDEs had to the development of employability skills by selected characteristics.

Descriptive statistics, including means and standard deviations were used to report data. Cohen's d was used to compare the means for students in grouped into two categories. Thalheimer and Cook's (2003) descriptors will be used to calculate and interpret the magnitude of the effect sizes (see Table 7).

The two characteristics in question are gender and academic level. Cohen's *d* only allowed two groups to be compared at one time. Gender is already split into two groups; however, there are four academic levels which had to be dichotomized to compare mean

values using Cohen's *d*. The two groups formed consisted of freshmen and sophomores grouped into underclassmen, while juniors and seniors were grouped into upperclassmen. Cohen's *d* was then used to compare mean values for underclassmen and upperclassmen, and an effect size was reported.

Table 7

Thalheimer and Cook's (2003) Descriptors for Relative Size of Cohen's d

Effect Size	Value of Cohen's d
Negligible effect	>= -0.15 and <. 15
Small effect	>=.15 and <.40
Medium effect	>=.40 and <.75
Large effect	>=.75 and <1.10
Very large effect	>=1.10 and <1.45
Huge effect	>1.45

Research Objective Four

Describe the relationship between the contribution of participating in CDEs toward the development of employability skills and a participant's performance at the state level competition.

To address research objective four, a Pearson Product Moment Correlations (r) Pearson r was calculated between the perceived contribution of participating in CDEs to the development of employability skills and performance scores. Hopkins (2002) descriptors were used to interpret the magnitude of the correlation coefficient (see Table 8).

Table 8

Hopkins' (2002) Descriptors for Describing the Magnitude of a Relationship

r value	Descriptor
0.9 - 1.0	Nearly perfect
0.7 - 0.9	Very large
0.5 - 0.7	Large
0.3 - 0.5	Moderate
0.1 - 0.3	Small, low, minor
0.0 - 0.1	Trivial, very small, insubstantial, tiny practically zero

Research Objective Five

Compare the performance of participants in each CDE by selected characteristics.

Descriptive statistics, including means and standard deviations were used to report data that was interval or ratio. Cohen's d was used to compare the means for the selected characteristics. Thalheimer and Cook's (2003) descriptors was used to calculate and interpret the magnitude of the effect sizes.

CHAPTER IV

FINDINGS

The purpose of this study was to assess the contribution of secondary agriculture students' participation in selected Career Development Events (CDEs) toward the development of employability skills. The study sought to assess the participants' perceptions regarding level of contribution to their development of identified employability skills. This chapter includes the results of the statistical analysis procedures for the five research objectives of the study.

Population

The population for this study was participants qualifying for state competition in three selected agriculture Career Development Events (CDEs) in the state of Missouri for the 2007-2008 academic year. The frame for participants was obtained from the University of Missouri's Agricultural Education Department, which coordinated the contests. The population consisted of 402 participants involved in the three selected CDEs at the state level competition. The population was divided by CDE with agricultural sales having 90 participants, forestry having 130 participants and horse evaluation having 182 participants. The accepting sample consisted of 355 (88%) participants who completed the questionnaire. The accepting sample divided by CDE included 90 (100%) participants in agricultural sales, 117 (90%) participants in forestry

and 148 (81.3%) participants in horse evaluation. Approximately 12% of participants did not complete the questionnaire for two presumed reasons: the participant was under the age of 18 and did not attain a signed parental consent form or the participant independently chose not to complete the questionnaire.

Research Objective One

Research objective one sought to describe the characteristics (gender, academic level and plans following graduation) of participants. Descriptive statistics were used to explain the findings. Specifically, frequency counts and percentages were used to describe nominal data.

The gender of participants by career development event is reported in Table 9. The gender representation in agricultural sales and horse evaluation varied considerably from forestry. Participants for both agricultural sales and horse evaluation were approximately 75% female. Participants in forestry were approximately 80% male.

Table 9

Participants' Gender by Career Development Event (n = 355)

	Agricultural Sales		Forestry		Horse		Total	
Gender	*f*	%	*f*	%	*f*	%	*f*	%
Female	71	78.9	24	20.5	112	75.7	207	58.3
Male	19	21.1	93	79.5	36	24.3	148	41.7
Total	90	100.0	117	100.0	148	100.0	355	100.0

The academic level of participants by career development event is reported in Table 10. Academic level representation varied considerably among the three CDEs.

Agricultural sales had an overwhelming majority of participants who were upperclassmen, 47.8% juniors and 38.9% seniors. Nearly half of forestry participants were sophomores (45.3%) followed by juniors (28.2%) then seniors (21.4%). Participants of the horse evaluation were evenly distributed with approximately 25% in each academic level.

Table 10

Participants' Academic Level by Career Development Event (n = 355)

	Agricultural Sales		Forestry		Horse		Total	
Academic Level	*f*	%	*f*	%	*f*	%	*f*	%
Freshman	2	2.2	6	5.1	41	27.7	49	13.8
Sophomore	10	11.1	53	45.3	38	25.7	101	28.5
Junior	43	47.8	33	28.2	34	23.0	110	31.0
Senior	35	38.9	25	21.4	35	23.6	95	26.7
Total	90	100.0	117	100.0	148	100.0	355	100.0

The plans of participants following high school by career development event are reported in Table 11. For each CDE, nearly 90% of the participants planned to further their education by attending a four year college, a two year college or a trade/technical school. The highest percentage of participants for each CDE claimed their plans were to attend a four year college, with agricultural sales at 82.2%, forestry at 60.7% and horse evaluation at 69.6%. The lowest percentage of participants for each CDE claimed their plans were to pursue employment, with agricultural sales at 0.0%, forestry at 3.4% and horse evaluation at 2.0%.

Table 11

Participants' Plans Following High School by Career Development Event (n = 355)

	Agricultural Sales		Forestry		Horse	
Plans Following High School	*f*	%	*f*	%	*f*	%
Attend a four year college	74	82.2	71	60.7	103	69.6
Attend a two year college	11	12.2	15	12.8	19	12.8
Attend a trade/technical school	2	2.2	16	13.7	9	6.1
Enter military	2	2.2	4	3.4	6	4.1
Pursue employment	0	0.0	4	3.4	3	2.0
Other	1	1.1	7	6.0	8	5.4
Total	90	100.0	117	100.0	148	100.0

Research Objective Two

The second research objective sought to describe the contribution of participating in selected CDEs toward the development of employability skills, as perceived by participants. To report the data, descriptive statistics were used, including means and standard deviations. Employability skills were summated by construct for clarity in reporting the descriptive statistics.

Nine employability skill constructs were associated with the objectives and components of the agricultural sales CDE (see Table 12). Participants of agricultural sales indicated that as a result of their participation in the CDE, a major contribution had been made toward their development of all nine employability skill constructs. The employability skills enhanced the most as a result of participating in the agricultural sales CDE included oral communication (M = 3.47), listening (M = 3.44) and motivation-personal strengths (M = 3.41). The summated mean of 3.15 indicated that overall, the

agricultural sales CDE had a major contribution in developing participants' employability skills.

Table 12

Perceived Contribution of Participating in the Agricultural Sales Career Development Event to the Development of Employability Skills (n = 90)

Employability Skill Construct	M	SD
Oral Communication	3.47	.73
Listening	3.44	.66
Motivation-Personal Strengths	3.41	.58
Interpersonal Relations	3.31	.61
Decision-Making Skills	3.13	.59
Creativity, Innovation and Change	3.13	.60
Organization and Time Management	3.10	.47
Ability to Conceptualize	2.89	.71
Problem Solving and Analytic Skills	2.85	.53
Summated Mean	3.15	.44

Note. Scale: 0.00 – 0.50 = No Contribution, 0.51 – 1.50 = Minor Contribution, 1.51 – 2.50 = Moderate Contribution, 2.51 – 3.50 = Major Contribution, 3.51 – 4.00 = Extreme Contribution

Eight employability skill constructs were associated with the objectives and components of the forestry CDE (see Table 13). Participants of the forestry CDE indicated that as a result of their participation in the CDE, a major contribution had been made toward their development of all but one employability skill constructs. The remaining construct provided a moderate contribution. Listening (M = 2.97) followed by motivation-personal strengths (M = 2.85) were reported by participants to have been

enhanced the greatest. A summated mean of 2.70 indicated that overall, the forestry CDE had major contribution to participants' employability skill development.

Table 13

Perceived Contribution of Participating in the Forestry Career Development Event to the Development of Employability Skills (n = 117)

Employability Skill Construct	M	SD
Listening	2.97	.95
Motivation-Personal Strengths	2.85	.66
Decision-Making Skills	2.77	.63
Ability to Conceptualize	2.72	.75
Creativity, Innovation and Change	2.70	.80
Organization and Time Management	2.65	.73
Problem Solving and Analytic Skills	2.52	.59
Oral Communication	2.47	.86
Summated Mean	2.70	.55

Note. Scale: 0.00 – 0.50 = No Contribution, 0.51 – 1.50 = Minor Contribution, 1.51 – 2.50 = Moderate Contribution, 2.51 – 3.50 = Major Contribution, 3.51 – 4.00 = Extreme Contribution

Eight employability skill constructs were associated with the objectives and components of the horse evaluation CDE (see Table 14). Participants in the horse evaluation CDE indicated that through their participation, a major contribution had been made toward their development of all eight employability skill constructs. The employability skill constructs enhanced the most as a result of participating in the horse evaluation CDE included motivation-personal strengths (M = 3.09) and listening (M =

3.06). The summated mean of 2.91 indicated that overall, the horse evaluation CDE had a major contribution to participants' employability skill development.

Table 14

Perceived Contribution of Participating in the Horse Evaluation Career Development Event to the Development of Employability Skills (n = 148)

Employability Skill Construct	M	SD
Motivation-Personal Strengths	3.09	.60
Listening	3.06	.81
Decision-Making Skills	2.98	.61
Oral Communication	2.95	.69
Creativity, Innovation and Change	2.90	.79
Organization and Time Management	2.89	.67
Problem Solving and Analytic Skills	2.73	.52
Ability to Conceptualize	2.73	.60
Summated Mean	2.91	.48

Note. Scale: 0.00 – 0.50 = No Contribution, 0.51 – 1.50 = Minor Contribution, 1.51 – 2.50 = Moderate Contribution, 2.51 – 3.50 = Major Contribution, 3.51 – 4.00 = Extreme Contribution

Research Objective Three

The third research objective sought to compare the contribution that participation in selected CDEs had to the development of employability skills by selected characteristics. To compare the contribution ratings by selected characteristics, means and standard deviations for each CDE are reported. Cohen's *d* was then used to determine effect size from the reported means. Thalheimer and Cook's (2003) descriptors were used to interpret the magnitude of the effect sizes.

Regarding agricultural sales, negligible to medium differences were found between genders for perceived contribution to the development of employability skills was found from participants in the CDE (see Table 15). Females consistently reported a greater contribution to their development of employability skills from participation in the CDE than males. While both genders reported participation in the agricultural sales had a major contribution to employability skill development, females contributed .15 greater to their summated mean than their male counterparts. As a result, a small effect size was established for gender in agricultural sales (Cohen's d = .34). Females indicated their listening skills (M = 3.51) were enhanced the most, while males indicated oral communication (M = 2.86). Gender had the greatest impact (Cohen's d = .46) on mean differences between males and females from the listening construct.

Table 15

A Comparison of Perceived Contribution of Participating in the Agricultural Sales Career Development Event to the Development of Employability Skills by Gender (n = 90)

	Female (n = 71)		Male (n = 19)		
Employability Skill Construct	M	SD	M	SD	Cohen's *d*
Listening	3.51	.68	3.21	.54	.46
Motivation – Personal Strengths	3.46	.54	3.22	.71	.42
Organization and Time Management	3.13	.48	2.96	.45	.37
Creativity, Innovation and Change	3.17	.62	2.96	.54	.35
Problem Solving and Analytic Skills	2.87	.56	2.75	.39	.23
Interpersonal Relations	3.34	.63	3.21	.54	.21
Ability to Conceptualize	2.91	.71	2.81	.75	.14
Oral Communication	3.48	.73	3.42	.73	.08
Decision-Making Skills	3.12	.60	3.13	.57	.02
Summated Mean	3.18	.45	3.03	.40	.34

Note. Scale: 0.00 – 0.50 = No Contribution, 0.51 – 1.50 = Minor Contribution, 1.51 – 2.50 = Moderate Contribution, 2.51 – 3.50 = Major Contribution, 3.51 – 4.00 = Extreme Contribution

Negligible to small differences between genders for perceived contribution to the development of employability skills was found from participants in the forestry CDE (see Table 16). While both genders reported participation in the forestry CDE had major contribution to employability skill development, females contributed .08 greater to their summated mean than their male counterparts. Therefore, a small effect size was established for gender in forestry (Cohen's d = .15). Both genders indicated their listening skills were enhanced the most as a result of participating in the forestry CDE.

Gender had the greatest impact (Cohen's *d* = .38) on mean differences between males and females from the creativity, innovation and change construct.

Table 16

A Comparison of Perceived Contribution of Participating in the Forestry Career Development Event to the Development of Employability Skills by Gender(n = 117)

	Female (n = 24)		Male (n = 93)		
Employability Skill Construct	M	SD	M	SD	Cohen's *d*
Creativity, Innovation and Change	2.46	.93	2.76	.76	.38
Listening	3.25	1.03	2.90	.92	.37
Decision-Making Skills	2.94	.64	2.73	.62	.34
Motivation-Personal Strengths	2.99	.66	2.81	.66	.28
Oral Communication	2.35	.97	2.49	.83	.19
Organizational and Time Management	2.75	.85	2.63	.70	.18
Ability to Conceptualize	2.65	.81	2.74	.74	.12
Problem Solving and Analytic Skills	2.51	.52	2.52	.62	.02
Summated Mean	2.76	.59	2.68	.54	.15

Note. Scale: 0.00 – 0.50 = No Contribution, 0.51 – 1.50 = Minor Contribution, 1.51 – 2.50 = Moderate Contribution, 2.51 – 3.50 = Major Contribution, 3.51 – 4.00 = Extreme Contribution

Small to moderate differences between genders for perceived contribution to the development of employability skills was found from participants in the horse evaluation CDE (see Table 17). Females consistently contributed more to their development of employability skills from participation in the CDE than males. While both genders reported participation in horse evaluation had a major contribution to employability skill development, females contributed .25 greater to their summated mean their male

counterparts. As a result, a medium effect size was established for gender (Cohen's *d* = .34). The two genders indicated different employability skill constructs which were enhanced the most as a result of participating in horse evaluation. Females indicated their listening skills (M = 3.17) were enhanced the most, while males indicated motivation-personal strengths (M = 2.86). Gender had the greatest impact (Cohen's *d* = .57) on mean differences between males and females from the listening construct.

Table 17

A Comparison of Perceived Contribution of Participating in the Horse Evaluation Career Development Event to the Development of Employability Skills by Gender (n = 148)

	Female (n = 112)		Male (n = 36)		
Employability Skill Construct	M	SD	M	SD	Cohen's *d*
Listening	3.17	.71	2.72	1.00	.57
Organization and Time Management	2.97	.63	2.61	.72	.56
Motivation-Personal Strengths	3.16	.52	2.86	.75	.52
Creativity, Innovation and Change	2.98	.71	2.64	.96	.44
Problem Solving and Analytic Skills	2.78	.50	2.60	.56	.35
Decision-Making Skills	3.03	.57	2.83	.70	.33
Oral Communication	3.00	.68	2.82	.72	.26
Ability to Conceptualize	2.76	.59	2.62	.64	.23
Summated Mean	2.97	.43	2.72	.58	.54

Note. Scale: 0.00 – 0.50 = No Contribution, 0.51 – 1.50 = Minor Contribution, 1.51 – 2.50 = Moderate Contribution, 2.51 – 3.50 = Major Contribution, 3.51 – 4.00 = Extreme Contribution

When gender was compared for each CDE, females consistently perceived their participation in the respective CDE to contribute more to the development of

employability skills than their male counterparts. Females participating in agricultural sales perceived the strongest contribution to the development of employability skills with a total summated mean of 3.18 (see Table 15). On the other hand, males in forestry perceived participation in the CDE contributed the least to their development of employability skills with a summated mean of 2.68 (see Table 16). The greatest difference in contribution by gender from was observed in horse evaluation (see Table 17). A difference of .25 was identified between females (M = 2.97) and males (M = 2.72) resulting in a medium effect size (Cohen's *d* = .54).

To compare the contribution ratings by academic level, means and standard deviations for each CDE were reported. To compare the mean values using Cohen's *d*, the four academic levels had to be dichotomized into two groups. The two groups formed consisted of freshmen and sophomores grouped into underclassmen, while juniors and seniors were grouped into upperclassmen. Cohen's *d* was then used to compare mean values for underclassmen and upperclassmen, and an effect size was reported.

Negligible to small differences were found between academic levels for perceived contribution to the development of employability skills from participation in the agricultural sales CDE (see Table 18). Underclassmen consistently reported a greater contribution to their development of employability skills from participation in the CDE than upperclassmen. While both academic levels reported that participation in the agricultural sales CDE had a major contribution to employability skill development, underclassmen reported a greater contribution (.13) to their summated mean than upperclassmen. Therefore, a small effect size was established for academic level in

agricultural sales (Cohen's *d* = .30). The two academic levels indicated different employability skill constructs which were enhanced the most as a result of participating in agricultural sales. Underclassmen indicated their listening skills (M = 3.54) were enhanced the most, while upperclassmen indicated oral communication (M = 3.49). Academic level had the greatest impact (Cohen's *d* = .60) on mean differences between upperclassmen and underclassmen from the decision-making skills construct.

Table 18

A Comparison Perceived Contribution of Participating in the Agricultural Sales Career Development Event to the Development of Employability Skills by Academic Level (n = 90)

	Underclassmen (n = 12)		Upperclassmen (n = 78)		
Employability Skill Construct	M	SD	M	SD	Cohen's *d*
Decision-Making Skills	3.42	.73	3.08	.55	.60
Ability to Conceptualize	3.17	.80	2.84	.69	.47
Problem Solving and Analytic Skills	3.00	.43	2.82	.54	.35
Organization and Time Management	3.22	.60	3.08	.45	.30
Oral Communication	3.29	.89	3.49	.70	.28
Interpersonal Relations	3.19	.70	3.33	.60	.23
Motivational-Personal Skills	3.51	.59	3.40	.58	.19
Listening	3.17	.80	2.84	.69	.17
Creativity, Innovation and Change	3.54	.58	4.43	.67	.08
Summated Rating	3.26	.51	3.13	.43	.30

Note. Scale: 0.00 – 0.50 = No Contribution, 0.51 – 1.50 = Minor Contribution, 1.51 – 2.50 = Moderate Contribution, 2.51 – 3.50 = Major Contribution, 3.51 – 4.00 = Extreme Contribution

Negligible to small differences were found between academic levels for perceived contribution to the development of employability skills from participation in the forestry CDE (see Table 19). Underclassmen consistently reported greater contribution to their development of employability skills from participation in the CDE than upperclassmen. While both academic levels reported participation in the forestry had major contribution to employability skill development, underclassmen reported a greater contribution (.09) to their summated mean than upperclassmen. As a result, a small effect size was established for academic level in forestry (Cohen's d = .13). Both academic levels indicated their listening skills were enhanced the most as a result of participating in the forestry CDE. Academic level had the greatest impact (Cohen's d = .35) on mean differences between upperclassmen and underclassmen from the ability to conceptualize construct.

Table 19

A Comparison of Perceived Contribution of Participating in the Forestry Career Development Event to the Development of Employability Skills by Academic Level (n = 117)

	Underclassmen (n = 59)		Upperclassmen (n = 58)		
Employability Skill Construct	M	SD	M	SD	Cohen's *d*
Ability to Conceptualize	2.85	.72	2.59	.77	.35
Creativity, Innovation and Change	2.83	.72	2.57	.86	.33
Decision-Making Skills	2.84	.63	2.70	.62	.23
Motivation-Personal Strengths	2.90	.65	2.79	.67	.17
Oral Communication	2.53	.77	2.41	.94	.14
Problem Solving and Analytic Skills	2.55	.56	2.48	.63	.12
Listening	3.02	.92	2.93	.99	.10
Organization and Time Management	2.62	.63	2.69	.82	.10
Summated Rating	2.74	.74	2.65	.61	.13

Note. Scale: 0.00 – 0.50 = No Contribution, 0.51 – 1.50 = Minor Contribution, 1.51 – 2.50 = Moderate Contribution, 2.51 – 3.50 = Major Contribution, 3.51 – 4.00 = Extreme Contribution

Negligible to small differences were identified between academic levels for perceived contribution to the development of employability skills from participation in the horse evaluation CDE (see Table 20). Underclassmen consistently reported a greater contribution to their development of employability skills from participation in the CDE than upperclassmen. While both academic levels reported that participation in the horse evaluation had a major contribution to employability skill development, underclassmen reported a greater contribution (.04) to their summated mean than upperclassmen.

Therefore, a negligible effect size was established for academic level in horse evaluation (Cohen's *d* = .08). The two academic levels indicated different employability skill constructs which were enhanced the most as a result of participating in agricultural sales. Underclassmen indicated their listening skills (M = 3.19) were enhanced the most, while upperclassmen indicated motivation-personal strengths (M = 3.05). Academic level had the greatest impact (Cohen's *d* = .35) on mean differences between upperclassmen and underclassmen from the listening construct.

Table 20

A Comparison of Perceived Contribution of Participating in the Horse Evaluation Career Development Event to the Development of Employability Skills by Academic Level (n = 1480

	Underclassmen (n = 79)		Upperclassmen (n = 69)		
Employability Skill Construct	M	SD	M	SD	Cohen's *d*
Listening	3.19	.75	2.91	.85	.35
Oral Communication	3.00	.73	2.89	.65	.16
Motivation-Personal Strengths	3.12	.61	3.05	.58	.12
Ability to Conceptualize	2.76	.57	2.69	.64	.12
Creativity, Innovation and Change	2.92	.80	2.87	.78	.06
Decision-Making Skills	2.97	.62	3.00	.60	.05
Problem Solving and Analytic Skills	2.74	.54	2.72	.50	.04
Organization and Time Management	2.89	.69	2.88	.65	.01
Summated Mean	2.93	.49	2.89	.47	.08

Note. Scale: 0.00 – 0.50 = No Contribution, 0.51 – 1.50 = Minor Contribution, 1.51 – 2.50 = Moderate Contribution, 2.51 – 3.50 = Major Contribution, 3.51 – 4.00 = Extreme Contribution

For all three CDEs, underclassmen perceived participation in their respective CDE to contribute slightly more to their development of employability skills than upperclassmen. The greatest difference was found in the agricultural sales CDE with the underclassmen having a 3.26 summated mean while upperclassmen had a 3.13. The Cohen's *d* effect sizes for academic level in agricultural sales (.30) and forestry (.13) were both small, while horse evaluation was found to have a negligible effect size.

Research Objective Four

The fourth research objective sought to describe relationships between the contribution of participating in CDEs toward the development of employability skills and a participant's performance in the CDE at the state level competition. Coefficients were calculated using Pearson Product Moment Correlations (see Table 21).

Similar correlations existed between performance of participants and perceived contribution toward development of employability skills among all three CDEs. Agricultural sales had seven out of nine employability skill constructs generating a small positive (Hopkins, 2002) correlation with performance. Forestry had four out of eight employability constructs generating small positive correlation with performance, while horse evaluation only had one. All remaining correlations were found to be trivial. Each CDE had a different employability skill construct that established the strongest correlation with performance. Participants' performance in agricultural sales produced the strongest correlation with the perceived development of interpersonal relations (.26) and listening (.26). Participants' performance in forestry produced the strongest

correlation with the perceived development of motivation-personal strengths (.24), while the strongest correlation in horse evaluation existed between performance and oral communication (.11). Trivial negative correlations existed between participants' performance in horse evaluation and perceived development in their ability to conceptualize (r = -.01) and listening (r = -.04) skills.

Table 21

Pearson Product Moment Correlation Matrix for Employability Skill Constructs' Contribution Ratings and Career Development Event Performance (n = 355)

	Performance		
Employability Skill Constructs	Agricultural Sales	Forestry	Horse
Ability to Conceptualize	.22[a]	.17[a]	-.01[b]
Creativity, Innovation and Change	.13[a]	.17[a]	.06[b]
Decision-Making Skills	.07[b]	.07[b]	.01[b]
Interpersonal Relations	.26[a]	--[c]	--[c]
Listening	.26[a]	.07[b]	-.04[b]
Motivation-Personal Strengths	.17[a]	.24[a]	.10[b]
Oral Communication	.21[a]	.09[b]	.11[a]
Organization and Time Management	.10[a]	.03[b]	.03[b]
Problem Solving and Analytic Skills	.07[b]	.11[a]	.05[b]
Summated Mean	.19[a]	.15[a]	.06[b]

Note. Hopkins' (2002) Descriptors: [a] = small; [b] = trivial; [c] = construct not associated with CDE

Research Objective Five

The fifth objective sought to compare the performance of participants in each CDE by selected characteristics. Descriptive statistics, including means and standard deviations were used to report the results. Cohen's *d* was used to compare the means for

characteristic groups and determine effect size. Thalheimer and Cook's (2003) descriptors were used to interpret the magnitude of the effect sizes. Please note that there are different points possible for each CDE (see Table 22).

Table 22

Possible Points for Each Career Development Event

Career Development Event	Total Points Possible
Agricultural Sales	400
Forestry	500
Horse Evaluation	450

Participants enrolled in a subject related course consistently scored higher among each of the three CDEs than participants not enrolled (see Table 23). The greatest difference between the two groups was reported in forestry with a difference in average score of 28.0. As a result, a comparison of means for the forestry CDE yielded a medium effect size (Cohen's d = .40). Agricultural sales participants enrolled in a subject related course scored 9 points greater than those who were not, while horse evaluation participants enrolled in a subject related course scored 14 points greater than those who were not. A small effect size was found in a comparison of means for both agricultural sales (Cohen's d = .18) and horse evaluation (Cohen's d = .38).

Table 23

A Comparison between Participants Enrolled and Not Enrolled in a Subject Related Course and Performance in Career Development Events (n = 355)

	Enrolled (n = 145)				Not Enrolled (n = 210)				
CDE	*f*	%	M	SD	*f*	%	M	SD	Cohen's *d*
Agricultural Sales	51	56.7	301.0	49.8	39	43.3	292.1	49.0	.18
Forestry	27	23.1	338.0	65.3	90	76.9	310.0	71.2	.40
Horse	67	45.3	329.9	39.2	81	54.7	316.1	34.4	.38

Slight differences were found between gender performances in all three CDEs. (see Table 24). The greatest difference between genders was observed in the horse evaluation CDE with females scoring 11.8 points greater than the males, followed closely by agricultural sales with females scoring 10 points greater than males. The Cohen's *d* effect size for both agricultural sales (Cohen's *d* = .21) and horse evaluation (Cohen's *d* = .31) was small. There was relatively no difference found in performance between genders in forestry. The forestry CDE was found to have a negligible effect size (Cohen's *d* = .01).

Table 24

A Comparison between Gender and Performance in Career Development Events (n = 355)

	Female (n = 207)				Male (n = 148)				
CDE	*f*	%	M	SD	*f*	%	M	SD	Cohen's *d*
Agricultural Sales	71	74.0	299.3	46.0	19	19.8	289.0	61.1	.21
Forestry	24	20.5	315.4	58.5	93	79.5	316.0	73.2	.01
Horse	112	75.7	330.0	30.3	36	24.3	318.2	56.9	.31

To compare the mean values using Cohen's *d*, the four academic levels had to be dichotomized. The two groups formed consisted of freshmen and sophomores grouped into underclassmen, while juniors and seniors were grouped into upperclassmen. Cohen's *d* was then used to compare mean values for underclassmen and upperclassmen, and an effect size was reported (see Table 25).

A considerable difference can be seen between academic level and performance in the respective CDE. Upperclassmen consistently performed higher than underclassmen. Agricultural sales reported the greatest difference with upperclassmen scoring 30 points greater than underclassmen. As a result, a medium effect size was established for performance among academic levels in agricultural sales (Cohen's d = .63). Forestry reported a 16 point difference between academic levels, while horse evaluation reported a 6 point difference. A small effect size was established for the mean scores among academic levels for both forestry (Cohen's d = .24) and horse evaluation (Cohen's d = .16).

Table 25

A Comparison between Academic Level and Performance in Career Development Events (n = 355)

	Underclassmen (n = 150)				Upperclassmen (n = 205)				
CDE	*f*	%	M	SD	*f*	%	M	SD	Cohen's *d*
Agricultural Sales	12	13.3	270.8	49.2	78	86.7	301.2	48.4	.63
Forestry	59	50.4	306.9	65.7	58	50.6	323.0	70.8	.24
Horse	79	53.4	324.2	29.6	69	46.6	330.5	46.8	.16

CHAPTER V

SUMMARY, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

This chapter presents an overview of the purpose, objectives, limitations, research design, population, instrumentation, data collection and analysis. Summary of the findings will be included followed by conclusions and implications for each of the five objectives based on the findings and existing employability skills literature. Finally, recommendations which may contribute to the enhancement of career development events and participants' development of employability skills will be provided.

Purpose of the Study

The purpose of this study was to assess the contribution of secondary agriculture students' participation in selected Career Development Events (CDEs) toward the development of employability skills. The study sought to assess the participants' perceptions regarding level of contribution to their development of identified employability skills. To provide direction to the study, the following objectives were developed.

Objectives

1. Describe the characteristics (gender, academic level and plans following graduation) of participants.
2. Describe the contribution of participating in selected CDEs toward the development of employability skills, as perceived by participants.

3. Compare the contribution that participation in selected CDEs had to the development of employability skills by selected characteristics.
4. Describe the relationship between the contribution of participating in CDEs toward the development of employability skills and a participant's performance at the state level competition.
5. Compare the performance of participants in each CDE by selected characteristics.

Limitations of the Study

1. The study was limited to participants of purposefully selected CDEs at the state level. These CDEs include agricultural sales, horse evaluation, and forestry.
2. Time and resources limited the study to three of the fifteen agriculture CDEs conducted at the state level in Missouri.
3. This study cannot ensure representation of all participants of the CDE.

Research Design

The design of this study was correlation research which aims to explore the relationship between characteristics (Ary, Jacobs, Razavieh & Sorenson, 2006). "Specifically, it investigates how scores on one or more variables rise and fall as scores on other variables rise or fall" claimed Ary, et al (2006). This correlational used a survey to collect data on the participants. Gall, Gall and Borg (2003) stated that the purpose of a survey is to "use questionnaires or interviews to collect date from a sample that has been selected to represent a population to which the findings of the data analysis can be

generalized" (p. 223). This study provided the participants with the opportunity to assess their own personal growth based on their participation in a CDE by completing a questionnaire. The end sought for this study was that particular employability skills are acquired or enhanced with participation in a selected CDE.

Population

The population for this study was participants qualifying for state competition in three selected agriculture Career Development Events (CDEs) in the state of Missouri for the 2007-2008 academic year. The frame for participants was obtained from the University of Missouri's Agricultural Education Department, which coordinated the contests. The population consisted of 402 participants involved in the three selected CDEs at the state level competition. The population was divided by CDE with agricultural sales having 90 participants, forestry having 130 participants and horse evaluation having 182 participants. From the population, 355 participants completed the questionnaire, resulting in an 88% response rate. Of the 355 total respondents, 90 (100%) participated in agricultural sales, 117 (90%) participated in forestry and 148 (81.3%) participated in horse evaluation.

Instrumentation

A need existed to analyze the data from each Career Development Event (CDE) separately due to different employability skills associated with each CDE. As a result, a separate questionnaire was developed for each of the three selected CDEs. The three

questionnaires consisted of two parts. Part I was modified from an original instrument constructed by Robinson (2006) that questioned college students on 67 employability skills critical to career success. These employability skills were grouped together by common themes, known as constructs. From the 67 employability skills in 18 constructs, the researcher selected the skills associated with the objectives of the CDE. The selected employability skills were then verified by state CDE superintendent who had extensive experience with the event.

Of the selected skills, only nine constructs were used for the agricultural sales instrument and eight for the horse evaluation and forestry instruments. Part I of this study measured the self-perceived contribution of participating in the CDE to the development of employability skills. The response scale of the questionnaire for contribution of participating in the CDE to the development of employability skills was the following:

0 – No Contribution

1 – Minor Contribution

2 – Moderate Contribution

3 – Major Contribution

4 – Extreme Contribution

Part II of the questionnaire consisted of five close-ended characteristic questions. Answers to these questions were used to compare the characteristics with the perceived development of employability skills from Part I. In addition, participants were asked to provide their contestant letter/number and school name at the top of the questionnaire.

Validity and Reliability

Validity is defined by Ary, Jacobs and Razavieh (2002) as the ability of a survey instrument or technique measure what it purports to measure. The focus of validity is accuracy of the instrument (Ary, Jacobs and Razavieh, 2002). Validity was established by a review conducted by professors and administrators at the University of Missouri who addressed face and content validity. Together, these experts evaluated face validity which assessed if the questionnaire "looks good on the surface (face) inspection" and looked like it was measuring what it claimed to be measuring (Ruane, 2005, p. 62).

Not only does an instrument have to be valid, it also needs to be reliable. Ruane (2005, p. 66) ensured, "a measure is considered reliable if it yields the same results each time it is used, assuming, of course, that there's been no real change in the variable being measured." In other words, when responses have a high rate of repeatability, the consistency of the results are deemed reliable.

To ensure the questionnaire was precise, items of clarity, reading level and format was verified by professors at the University of Missouri. Once the questionnaire was checked for precision, reliability was established through a pilot test. The pilot test was conducted with 14 participants of the agricultural sales CDE competing at Missouri's South Central district CDE competition. Upon analysis of assessment, a Cronbach's alpha of .97 was established indicating an internal consistency of the instrument.

Data Collection Procedures

The state competition for Missouri took place on April 17th and 18th, 2008 at the University of Missouri. Two weeks prior to the state competition, an email was sent to all advisors of state bound agricultural sales, forestry and horse evaluation CDE teams. The email had three purposes: 1) to congratulate their team for qualifying for the 2008 CDE competition, 2) to alert the participants and advisor of the purpose of the study and the forthcoming questionnaire participants were asked to complete at the competition, and 3) to allow participants who were under the age of 18 to acquire parental consent on the provided parental consent form attached to the email. A follow up email was sent one week prior to the state competition to remind advisors to collect parental consent forms from the members of the selected CDEs.

Each participant was identified with their questionnaire to compare the relationship of these responses with their performance. Identifying each participant with their questionnaire was done by having the individual write in their school name in a blank provided at the top of the questionnaire and then circling their individual contestant letter directly below the blank for school name.

This study used the same identification method as established by the CDE superintendents to identify a completed questionnaire and performance results with a participant. Therefore, a name was never written on a questionnaire. Instead, the questionnaire asked for the school they were from and the group letter they were designated to. The researcher then used the list created by the CDE Superintendent to match the school name and group letter written on a questionnaire to each participant.

Data Analysis

Data were analyzed using the Statistical Package for the Social Sciences (SPSS) 16.0 for Windows. The data analysis methods were selected according to the variables in question, to provide the greatest clarity in findings. To describe the data, most of the objectives were analyzed using central tendencies and variability.

Research objective one was addressed by calculating frequencies and percentages for the characteristics of the participants. To address objective two, summated means and standard deviations were calculated for respondents' perceived contribution of participating in CDEs to the development of employability skills. Objective three and five used summated means, standard deviations and Cohen's d to compare performance and contribution scores from various characteristic groups within a CDE. Research objective four was analyzed using coefficients calculated by using Pearson Product Moment correlation. The coefficients were used to describe the relationship between the contribution of participating in CDEs toward the development of employability skills and a participant's performance at the state level competition.

Summary of the Findings

Objective One – Characteristics of Participants

The characteristics vary considerably for each selected CDE. While three out of four participants for agricultural sales and horse evaluation were female, forestry only had one out of five female participants. In the agricultural sales, an overwhelming majority of participants were upperclassmen, 47.8% juniors and 38.9% seniors. In

forestry, sophomores had the largest group accounting for 45.3% of the total participants, followed by juniors (28.2%) then seniors (21.4%). The participants of the horse evaluation were evenly distributed at approximately 25% each. For each CDE, nearly 90% of the participants planned to further their education by attending a four year college, a two year college or a trade/technical school. Each CDE had an over whelming majority of participants planning to attend a four year college, with agricultural sales 82.2%, forestry 60.7% and horse evaluation 69.6%.

Objective Two – Contribution of Participating in Selected CDEs toward the Development of Employability Skills

Nine employability skill constructs were associated with the objectives and components of the agricultural sales CDE. The agricultural sales employability skill constructs enhanced the most as a result of participating in the agricultural sales CDE included oral communication (M = 3.47), listening (M = 3.44) and motivation-personal strengths (M = 3.41). The summated mean of 3.15 indicated that overall the agricultural sales CDE had a major contribution to participants' employability skill development.

Eight employability skill constructs were associated with the objectives and components of the forestry CDE. As a result of participating in the forestry CDE, participants indicated seven of eight employability skill constructs were majorly enhanced. The remaining construct had moderate contribution. The listening construct (M = 2.97) was reported by participants to have been enhanced the greatest. The forestry

CDE had a summated mean of 2.70, resulting in a major contribution to the development of employability skills associated with the CDE.

Eight employability skill constructs were associated with the objectives and components of the horse evaluation CDE. The employability skill constructs enhanced the most as a result of participating in the horse evaluation CDE included motivation-personal strengths (M = 3.09) and listening (M = 3.06). The summated mean of 2.91 indicated that overall the horse evaluation CDE had a major contribution to participants' employability skill development.

Objective Three – Contribution of Participating in Career Development to the Development of Employability Skills by Characteristics

When gender was compared for each CDE, females consistently perceived their participation in the respective CDE to contribute more to the development of employability skills than their male counterparts. Females participating in agricultural sales perceived the strongest contribution to the development of employability skills with a total summated mean of 3.18. On the other hand, males in forestry perceived participation in the CDE contributed the least to their development of employability skills with a summated mean of 2.68. The greatest difference in contribution by gender from one event was identified with horse evaluation with females at 2.97 and males at 2.72.

For all three CDEs, underclassmen perceived participation in their respective CDE to contribute slightly more to their development of employability skills than upperclassmen. The greatest difference was seen in the agricultural sales with the

underclassmen having 3.26 summated mean while upperclassmen had a 3.13. Cohen's *d* effect sizes for academic level in agricultural sales (.30) and forestry (.13) were both small, while horse evaluation was found to have a negligible effect size.

Objective Four – Relationship between Participants' Contribution Ratings and CDE Performance

Similar correlations existed between performance of participants and perceived contribution toward development of employability skills among all three CDEs. Agricultural sales had seven out of nine employability skill constructs generating a small positive correlation with performance. Forestry had four out of eight employability constructs generating a small positive correlation with performance, while horse evaluation only had one. All remaining correlations were found trivial. Each CDE found a different employability skill construct that established the strongest correlation with performance. Participants' performance in agricultural sales produced the strongest correlation with the perceived development of interpersonal relations (.26) and listening (.26). Participants' performance in forestry produced the strongest correlation with the perceived development of motivation-personal strengths (.24), while the strongest correlation in horse evaluation existed between performance and oral communication (.11).

Objective Five – Comparison of Participants' Performance by Selected Characteristics.

Participants enrolled in a subject related course consistently scored higher among each of the three CDEs than participants not enrolled. The greatest difference between the two groups was evident in forestry with a difference of 28.0 points. As a result, a comparison of means for forestry yielded a medium effect size (Cohen's d = .40). Agricultural sales participants enrolled in a subject related course scored 9 points greater than those who were not, while horse evaluation participants enrolled in a subject related course scored 14 points greater than those who were not. Both CDEs resulting in a small effect size for enrollment.

Slight differences were found between gender performances in all three CDEs. The greatest difference between genders is observed in the horse evaluation CDE with females scoring 11.8 points greater than the males, followed closely by agricultural sales with females scoring 10 points greater than males. Both were determined to have small effect sizes. There was relatively no difference found in performance between genders in forestry.

A considerable difference can was found between academic level performances. Upperclassmen consistently performed higher than underclassmen. Agricultural sales reported the greatest difference with upperclassmen scoring 30 points greater than underclassmen. As a result, a medium effect size was established for performance among academic levels in agricultural sales (Cohen's d = .63). Forestry reported a 16 point difference between academic levels, while horse evaluation reported a 6 point difference.

Conclusions and Implications

Objective one – Characteristics

The gender ratios of the participants varied considerably among the three CDEs. The gender representation in agricultural sales and horse evaluation varied greatly from the forestry CDE. While the participants for agricultural sales and horse evaluation were approximately 80% female and 20% male, the opposite was evident in forestry. The representation difference in the three CDEs for this study indicates that certain CDEs are prone to have overwhelming participation from one gender. Does this mean that advisors believe one gender performs better at a specific CDE? Do gender differences imply there is stereotyping of a particular gender to a CDE? Stereotyping a gender to a CDE could originate from related positions in the workplace.

Participation from each academic level also varied considerably among the three CDEs. Agricultural sales had an overwhelming majority of upperclassmen while forestry and horse evaluation were more evenly dispersed. Each CDE had a different academic level with the highest percentage of participants. Juniors accounted for the greatest percentage for agricultural sales at 47.8%. Sophomores accounted for the greatest percentage for forestry at 45.3%. Freshman accounted for the greatest percentage for horse evaluation at 27.7%. Does the greatest academic level representation for each CDE signify the earliest academic level in which the subject related course is offered? Perhaps this indicates advisors choose CDE team members from students who are enrolled in subject related courses for their experience. CDEs which offer the subject related course

at higher academic levels would explain why there is low participation from freshman in agricultural sales and forestry.

Participants from each CDE show a similar pattern for plans following high school. For each CDE, approximately 90% of the respondents planned to further their education by attending a four year college, a two year college or a trade/technical school. Does this indicate that CDE participants are more likely to further their education that the average agricultural education student? In a report by the Missouri Department of Elementary and Secondary Education (2007), 56% of high school agricultural education graduates continue their education beyond high school. This percentage is low in comparison to the participants of the three select CDEs. Therefore, if participants do pursue their reported plans following high school, state participants of the three selected CDEs are more likely to further their education beyond high school than the average agricultural education graduate.

The Missouri Department of Elementary and Secondary Education (2007) further reported that 39% of agricultural education graduates pursued employment. This percentage is considerably high compared to the 4% of participants from the CDEs which plan to pursue employment immediately following high school. The differences seen between this study and the report by the Missouri Department of Elementary and Secondary Education could be a result of asking the plans following high school for all academic levels. Seniors have a better concept of their plans following graduation because it is soon to occur. Freshmen on the other hand, have several years for their plans

and goals to change. Perhaps the number of participants to pursue employment is low because it is viewed as an alternative if furthering their education fails.

Objective Two – Contribution of Participating in Selected CDEs toward the Development of Employability Skills

When the summated and construct means are compared for each CDE differences in contribution to the development of employability skills is evident. The variation in summated and construct means among CDEs suggest the objectives and components of each CDE contribute differently to the development of selected employability skills. Of the three CDEs agricultural sales had the highest summated mean at 3.15. Therefore, agricultural sales participants perceived their employability skills were developed more than participants of forestry and horse evaluation. Since the researcher selected these three CDEs because they had the most employability skills associated with the objectives and components of the CDE, could one infer that participation in agricultural sales contributes more to the development of employability skills than any of the fifteen agriculture CDEs?

As stated previously, participation in each CDE had different contribution to the development of employability skills. As a result, each CDE has different constructs with the highest contribution levels. In agricultural sales, the employability skills enhanced the most from participation included oral communication, listening and motivation-personal strengths. In forestry, listening and motivation-personal strengths were enhanced the most from participation. In horse evaluation, motivation-personal strengths and listening were

enhanced the most from participation. For all three CDEs, listening and motivation-personal strengths were among the top employability enhanced by participation in the CDEs.

High contribution can imply two things about the participant and CDE. The first suggests that participants were weak in these skills prior to the competition therefore had the most room for improvement. The second suggests that the CDE does an exceptional job of incorporating activities and real world scenarios to have practice of the employability skill become natural behavior. Bancino and Zevalkink (2002) strongly recommend such learning activities and claim that technical minded students will be able to relate and understand the theories behind employability skills by using realistic scenarios to demonstrate their importance. Practice through engaged learning helps to take the "experience and turn it into a learned behavior," claims Bancino and Zevalkink (2007, p. 22). One of these suggestions or a combination of the two could explain the high contribution to the development of employability skills as perceived by participants of the agricultural sales CDE.

Agricultural sales had the highest summated mean for employability skills. Does the high contribution of participating in agricultural sales to the development of employability skills suggest that the objectives and components of this CDE could be a model for others? The objectives and components of the agricultural sales CDE had the most interaction and use of communication with other people. Does this indicate that CDEs which utilize more interaction with people result in greater contribution to the

development of employability skills? Could this be a suggestion for forestry which had the lowest summated mean?

Objective Three – Contribution of Participating in Career Development to the Development of Employability Skills by Characteristics

In a comparison among genders for development of employability skills, females consistently attributed greater development to participating in CDEs than males. What does this signify for females? Does this mean that females see greater immediate contribution to their employability skills while males see less? Do females actually generate stronger employability skills as a result of participating in the CDE than males? Possibly the results from performance can be viewed as a strong indicator as to what degree employability skills were developed by a participant.

The differences in mean values among genders resulted in considerable effect sizes in the three CDEs. Horse evaluation was found to have a moderate effect size for the perceived contribution of participating in CDEs to the development of employability skills by gender. Agricultural sales and forestry were both found to have small effect sizes. What do these effect sizes indicate? The answer lies with the size of the Cohen's *d* which indicates if a difference is of practical concern. The greater the value of the Cohen's *d*, the stronger the argument that there is a considerable difference among the two populations in question. With a moderate effect size among genders in the horse evaluation one can infer gender played a moderate role in the mean values for females

and males. Likewise, the small effect size observed in agricultural sales and forestry indicates that gender played a small role in the mean values for females and males.

For all three CDEs, underclassmen perceived participation in their respective CDE to contribute slightly more to their development of employability skills than upperclassmen. This could imply that underclassmen have less experience using employability skills, therefore, more room to develop while upperclassmen are older, and should have more experience with employability skills from school and non school activities, such as work positions.

The previous results suggest certain characteristics attribute higher levels of contribution than others. When genders were compared for the contribution of participating in CDE to the development of employability skills females perceived the greatest development. For academic level, underclassmen perceived the greatest development. Do these findings suggest that female underclassmen perceived the greatest development to their employability skills from participating in a CDE? Would this also indicate that male upperclassmen perceived the least development to their employability skills from participating in a CDE?

Objective Four – Comparison of Participants' Contribution Ratings and CDE Performance

Correlations between the development of all employability skills and a participant's performance at the state level were carried out for the three CDEs. All correlations were found to be trivial or small. A trivial descriptor signifies no significant

relationship between the development of employability skills and CDE performance. A small descriptor signifies a minute relationship between the development of employability skills and CDE performance. What do these correlations indicate? A strong correlation would indicate the higher a student performed at the state level, the higher that student will rate the contribution of participation to the development of employability skills. Agricultural sales had seven out of nine employability skill constructs generating a small correlation with performance. Forestry had four out of eight employability constructs generating a small correlation with performance, while horse evaluation only had one. All remaining correlations were found trivial. These trivial and small correlations indicate that participants' perceived contribution to the development of their employability skills have little indication on how they will perform. Likewise, how well a participant performs has very little indication of the employability skills they will develop. Therefore, performing low does not imply that a participant did not enhance employability skills.

Horse evaluation consistently showed trivial correlations between performance and the perceived development of employability skills. This implies that a participant's performance in the CDE gives no indication to their perceived development of employability skills from participation. Agricultural sales consistently showed small correlations between performance and the perceived development of employability skills. This implies a high performing participant would perceive their development of employability skills to be slightly higher than a participant who performed lower.

Objective Five – Comparison of Participants' Performance by Selected Characteristics.

Performance by enrollment in a subject related course shows that participants who have been enrolled in a subject related course score higher than participants who have not. Differences between the two populations suggest that knowledge gained in a subject related course assist participants to perform better in the related CDE. This would explain why participants who have been enrolled in a forestry course score 28 points higher than those who have not.

By comparing the performance scores of participants enrolled in a subject related course with those who have not, one could easily see the benefit of having team members who have been enrolled in a subject related course. In the forestry CDE, a four member team with all members enrolled in a subject related course, would on average, score 112 points greater than a team with all four members not enrolled in a subject related course. In horse evaluation, we would see a difference of 55 points. In agricultural sales we would see a difference of 36 points. Looking at the actual point difference of first and second place at the state competition shows approximately a 30 point difference in each CDE. Therefore, having members enrolled in a subject related course, could easily mean the difference between first and second place at the state competition.

Having stated earlier that some CDEs typically have more of one gender; does this mean that the more abundant gender performs better? In agricultural sales, females were the most abundant gender, accounting for 74% of the population. Performance results show that females do score 10 points higher than males. That being said, one would conclude a four member team of all females would score 40 points greater than a

four member team of all males. A similar gender ratio is evident in the horse evaluation. This CDE consists of 76% female participants. Performance results in horse evaluation show that females score 11.8 points higher than males. With a four member team of all females, the collective performance score would be approximately 47 points higher than an all male team. Does the higher performance of females suggest that females have greater skills to accomplish the objectives of the CDE? Does this mean that females are more competitive in these CDEs? If so, are the gender ratios of these two CDEs similar to gender ratios of people working in related fields in the industry? These performance differences could suggest that males in these two CDEs need to be provided with more encouragement to maintain the same level of performance.

The gender representation in forestry varied considerably from agricultural sales and horse evaluation. In the forestry CDE, males account for nearly 80% of the participants. However, performance results show that there is relatively no difference among genders. On average, males score .5 points greater than females which would result in a four member team difference of 2 points. Does this suggest males are pushed harder in this CDE than the other two? If there is not a performance difference among genders, why are 80% of the participants male?

Academic level representation in agricultural sales varied considerably from forestry and horse evaluation. In agricultural sales, approximately 13% of participants were underclassmen while forestry and horse consist of nearly 50% underclassmen. Why do CDEs vary in academic level representation? Is the small representation of

underclassmen in agricultural sales a result of the subject related course being offered strictly to upperclassmen?

Performance of upperclassmen was higher than underclassmen in all three CDEs. The greatest difference is shown in agricultural sales with the average upperclassmen scoring 31 points greater than underclassmen. This is a huge difference when multiplied by four member team of upperclassmen resulting in cumulative score of 124 points greater than a four member team of underclassmen. Forestry and horse evaluation do not show such an extreme difference. Forestry upperclassmen scored 16 points higher than underclassmen. This would result in a 64 point difference in team score with a four member team of all upperclassmen versus all underclassmen. Horse evaluation upperclassmen scored 6 points higher than underclassmen resulting in a 24 point difference in team score with a four member team of all upperclassmen versus all underclassmen.

The performance results of this study indicate that there are participants with certain characteristics which will perform the highest in each CDE. This study suggests that female, upperclassmen that have been enrolled in a subject related course would perform the best in agricultural sales. In forestry, a participant of any gender, who is an upperclassman and has been enrolled in a subject related course, would perform the best. In horse evaluation, female upperclassmen that have been enrolled in a subject related course would perform the best.

Recommendations

As a result of examining participants' perceived contribution to the development of employability skills and their performance in the state Career Development Event (CDE) competition, a number of recommendations are suggested for stakeholder groups. Recommendations further research will also be provided.

Recommendations for Stakeholders

Secondary agricultural education and the National FFA Organization's efforts to design and coordinate career development events to enhance the skills of agricultural education students should be commended. Agricultural education provides a learning environment that resembles real world situations to enhance essential skills and promote life-long learning. This study shows that agricultural education, not only strengthens students' technical knowledge, but also enhances employability skills highly desired in the workplace. However, there is always room for improvement. This study reported that overall, the agricultural sales CDE provided a major contribution to the development of participants' associated employability skills, while the forestry and horse evaluation CDEs contributed moderately to the development of employability skills. It should be noted that the objectives and components of each CDE utilize approximately half of all employability skill constructs needed to be successful in the workplace as determined by Evers et al. (1998). The contribution ratings and number of employability skill constructs utilized with each CDE indicate there is still opportunity for each to develop more employability skills at higher levels. That being said, how can improvements and

modifications be made to each of the CDEs to achieve greater development toward participants' employability skills?

Two suggestions are offered in effort to improve the respective CDEs with regard to enhancing participants' employability skill development. The first is to incorporate objectives and components to each CDE which place focus on both technical knowledge and skills and employability skills, to further develop each. Seeing that agricultural sales had the highest contribution to the development participants' employability skills, perhaps this CDE could serve as a model for creating objectives and components which incorporate the use of both technical and employability skills. The second recommendation to enhance development is to have participants reflect on their experience throughout the preparation and implementation of the competition. Bronson (2007) stresses that providing a student with real world scenarios followed by reflection maximizes the individual benefit of the experience. Time to reflect on participation in a CDE could lead participants to recognize and appreciate the full extent to which skills have been developed.

The findings of this study indicate that certain characteristics are associated with greater development of employability skills and increased performance in the respective CDEs. One characteristic, enrollment in a subject related course, had a considerable influence on the performance of the participants. Participants who have been enrolled in a subject related course performed considerably higher than participants who have not. Based on this finding, it is recommended that secondary agriculture instructors select students to participate in the respective CDEs based on students' enrollment in a subject

related course. For example, students participating in the agricultural sales CDE should be or have been enrolled in the agricultural sales and marketing course.

The study also found that females usually performed at a higher level and the CDEs contributed more to the development of their employability skills than their male counterparts. While it may be presumed there is no difference in intelligence among females and males why do these differences occur? Perhaps this difference is a result of female participants having more focus and /or motivation to succeed in the CDE.

The findings of this study should be shared with stakeholders so that they can recognize and appreciate the benefits that are derived from CDEs. Primary stakeholders include participants, parents, prospective employers, school administrators and secondary agriculture instructors. Participants can use the findings to their benefit in a resume or interview, highlighting the employability skills developed through their participation in the respective CDE. Employers can use the findings to identify the strengths of potential employees who have been involved in career development events. Secondary agriculture programs can use the findings to support their argument to parents and school administration that CDEs are worth the investment of time and effort. Other career and technical school organization can use the findings to support the development or continuation of similar developmental student activities.

Recommendations for Further Research

This line of inquiry should be expanded to secondary agriculture Career Development Events that were not investigated in the current study. Of the fifteen total

agriculture CDEs, time and effort available limited the study to three selected CDEs which were assumed by the researcher to associate the most employability skills. If the study was conducted on all fifteen CDEs, the findings would report the level of development for associated employability skills to determine were improvements and modifications could be made.

The findings of this study indicate that certain characteristics are associated with greater development of employability skills and increased performance in the respective CDEs. Additional investigation could determine why these differences exist. Areas to consider would include motivation to succeed, competitive level/interest, ability to focus, and maturity level. Information attained from such a study would be beneficial to place agriculture students in CDEs according to personal characteristics and interest.

Further research should not be confined to only participants of CDEs. Comparisons between agricultural CDE participants and non-participants can be conducted to determine employability skill development, academic motivation, and academic engagement. Information attained from such a study would establish the full benefit to participating in a CDE and help to further justify the investment of time and effort.

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APPENDICES

APPENDIX A:

EMPLOYABILITY SKILLS ASSOCIATED WITH EACH AGRICULTURE CAREER DEVELOPMENT EVENT

Table 24

Contribution of Participating in Career Development Events to the Development of Employability Skills

	Ag Mechanics	Ag Sales	Agronomy	Dairy Cattle	Dairy Foods	Entomology	Farm Management	Floriculture	Forestry	Horse	Livestock	Meats	Poultry	Soils	Nursery / Landscape
Problem Solving and Analytic															
1. Identifying problems	X	X	X	X	X		X	X	X	X	X	X	X	X	X
2. Prioritizing problems	X	X													
3. Solving problems	X	X		X	X		X	X	X	X	X	X	X		X
4. Contributing to group problem solving															
5. Identifying essential components of the problem	X	X	X	X	X		X	X	X	X	X		X	X	X
6. Sorting out the relevant data to solve the problem	X	X		X	X		X	X	X	X	X		X	X	X
Decision-Making															
7. Making decisions in a short time period	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8. Assessing long-term effects of decisions	X	X							X						
9. Making decisions on the basis of thorough analysis of the situation	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10. Identifying political implications of the decision to be made															
11. Knowing ethical implications of decisions									X						
12. Recognizing the effects of decisions to be made	X	X							X						
Organization and Time Management															
13. Establishing the critical events to be completed	X	X		X	X	X	X	X	X	X	X	X	X	X	X
14. Assigning/delegating responsibility															
15. Monitoring progress against the plan	X	X													
16. Integrating strategic considerations in the plans made		X													
17. Revising plans to include new information		X													
18. Setting priorities	X	X		X	X		X	X	X	X	X	X	X	X	X
19. Allocating time efficiently	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
20. Managing/overseeing several tasks at once															
21. Meeting deadlines	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Risk Taking							
22. Taking reasonable job-related risks							
23. Identifying potential negative outcomes when considering a risky venture							
24. Monitoring progress toward objectives in risky ventures							
25. Recognizing alternative routes in meeting objectives	X						
Oral Communication							
26. Conveying information one-to-one	X	X		X	X	X	
27. Communication ideas verbally to groups							
28. Making effective business presentations	X						
29. Making impromptu presentations							
Written Communication							
30. Writing reports							
31. Writing external business presentations							
32. Writing internal business communication							
33. Using proper grammar, spelling, and punctuation	X						
Listening							
34. Listening attentively	X						
35. Responding to others' comments during a conversation	X						
Interpersonal Relations							
36. Working well with fellow employees							
37. Relating well with supervisors							
38. Establishing good rapport with subordinates	X						
39. Empathizing with others	X						
40. Understanding the needs of others	X						
Managing Conflict							
41. Identifying sources of conflict among people							
42. Resolving conflicts							
Leadership and Influence							
43. Supervising the work of others							
44. Giving direction and guidance to others	X						
45. Delegating work to peers							
46. Delegating work to subordinates							
Coordinating							
47. Coordinating the work of peers							
48. Coordinating the work of subordinates							

Creativity, Innovation, and Change															
49. Providing novel solutions to the problems		X							X						
50. Adapting to situations of change		X													
51. Initiating change to enhance productivity		X							X						
52. Keeping up-to-date with external realities related to your company's success		X													
53. Reconceptualizing your role in response to changing corporate realities															
Visioning															
54. Conceptualizing a future for the company															
55. Providing innovating paths for the company to follow for future development															
Ability to Conceptualize															
56. Combining relevant information from a number of sources	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
57. Applying information to new or broader contexts		X													
58. Integrating information into more general contexts		X													
Lifelong Learning															
59. Keeping up-to-date on developments in the field															
60. Gaining new knowledge in areas outside the immediate job															
61. Gaining new knowledge from everyday experiences															
Motivation-Personal Strengths															
62. Maintaining a high energy level	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
63. Functioning at an optimal level of performance	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
64. Responding positively to constructive criticism	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
65. Maintaining a positive attitude	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
66. Functioning well in stressful situations	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
67. Ability to work independently	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

APPENDIX B:

EMAIL TO SELECTED CAREER DEVELOPMENT EVENT ADVISORS

April 7, 2008

Dear Ag Sales CDE Advisor,

CONGRATULATIONS to your Ag Sales team on qualifying for the 2008 State Career Development Event competition!

Have you ever wondered how participating in CDEs contribute to your students' personal growth and development? Have you ever been asked by your teaching colleagues, parents or even students, how participation in CDEs prepare students for their future careers? It is with these questions in mind that we're investigating the contribution of participating in the Ag Sales CDE toward the development of students' employability skills.

At the conclusion of the state competition, participants will be asked to complete a brief questionnaire that will ask them to assess the contribution of participating in the event had toward the development of selected employability skills.

Our goal is for each participant at the state Ag Sales competition to have an equal opportunity to provide input that will be collectively shared with secondary agriculture teachers. Since many of the students will be under the age of 18, we are asking for your help in collecting the necessary parental consent for them to complete the questionnaire.

Attached to this message, is a parental consent form (PDF) that we need your help in distributing and collecting from the members of your team. Please print a copy of the consent form for each team member, have them secure their parent's permission, then, bring the consent forms to check-in at the state Ag Sales CDE.

Your help is greatly appreciated and will contribute to the success in answering the questions proposed at the beginning of this message.

THANK YOU for your help!

Bryan L. Garton, MU Professor of Agricultural Education
Deanna Boardman, Research Assistant

April 7, 2008

Dear Forestry CDE Advisor,

CONGRATULATIONS to your Forestry team on qualifying for the 2008 State Career Development Event competition!

Have you ever wondered how participating in CDEs contribute to your students' personal growth and development? Have you ever been asked by your teaching colleagues, parents or even students, how participation in CDEs prepare students for their future careers? It is with these questions in mind that we're investigating the contribution of participating in the Forestry CDE toward the development of students' employability skills.

At the conclusion of the state competition, participants will be asked to complete a brief questionnaire that will ask them to assess the contribution of participating in the event had toward the development of selected employability skills.

Our goal is for each participant at the state Forestry competition to have an equal opportunity to provide input that will be collectively shared with secondary agriculture teachers. Since many of the students will be under the age of 18, we are asking for your help in collecting the necessary parental consent for them to complete the questionnaire.

Attached to this message, is a parental consent form (PDF) that we need your help in distributing and collecting from the members of your team. Please print a copy of the consent form for each team member, have them secure their parent's permission, then, bring the consent forms to check-in at the state Forestry CDE.

Your help is greatly appreciated and will contribute to the success in answering the questions proposed at the beginning of this message.

THANK YOU for your help!

Bryan L. Garton, MU Professor of Agricultural Education
Deanna Boardman, Research Assistant

April 7, 2008

Dear Horse Evaluation CDE Advisor,

CONGRATULATIONS to your Horse Evaluation team on qualifying for the 2008 State Career Development Event competition!

Have you ever wondered how participating in CDEs contribute to your students' personal growth and development? Have you ever been asked by your teaching colleagues, parents or even students, how participation in CDEs prepare students for their future careers? It is with these questions in mind that we're investigating the contribution of participating in the Horse Evaluation CDE toward the development of students' employability skills.

At the conclusion of the state competition, participants will be asked to complete a brief questionnaire that will ask them to assess the contribution of participating in the event had toward the development of selected employability skills.

Our goal is for each participant at the state Horse Evaluation competition to have an equal opportunity to provide input that will be collectively shared with secondary agriculture teachers. Since many of the students will be under the age of 18, we are asking for your help in collecting the necessary parental consent for them to complete the questionnaire.

Attached to this message, is a parental consent form (PDF) that we need your help in distributing and collecting from the members of your team. Please print a copy of the consent form for each team member, have them secure their parent's permission, then, bring the consent forms to check-in at the state Horse Evaluation CDE.

Your help is greatly appreciated and will contribute to the success in answering the questions proposed at the beginning of this message.

THANK YOU for your help!

Bryan L. Garton, MU Professor of Agricultural Education
Deanna Boardman, Research Assistant

APPENDIX C:

PARENTAL CONCENT FORM

PARENTAL CONSENT

Dear Parent/Guardian:

Your daughter/son is invited to participate in a study to assess the contribution of her/his participation in the state FFA Agricultural Sales Career Development Event (CDE) toward the development of selected employability skills. We are asking for your permission to allow your daughter/son to participate. If you grant permission, your daughter/son will be given a brief questionnaire to complete at the conclusion of the state CDE.

Any information obtained in connection with this study will remain confidential. Your daughter/son's responses will not be linked to her/his name or appear in any report of this study. If you have any questions or concerns about your daughter/son's participation in this study please feel free to contact me by email at dsbkb4@mizzou.edu or by phone at (573) 694-9641.

Participation in this study is completely voluntary. Consent or refusal to participate in this study will in no way affect your daughter/son's relationship with the University of Missouri. For more information concerning the rights of research participants you may contact the MU Campus Institutional Review Board by phone at 573-882-9585 or by mail at 483 McReynolds, University of Missouri, Columbia, MO 65211.

Respectfully,

Deanna Boardman
Research Assistant

Bryan L. Garton
Professor of Agricultural Education

Sign below to indicate your consent to allow your daughter/son to participate in the study. PLEASE return this document to your daughter/son's agriculture teacher.

_____ _____
Please print daughter/son's name School Name

_____ _____
Signature of Parent or Legal Guardian Date

PARENTAL CONSENT

Dear Parent/Guardian:

Your daughter/son is invited to participate in a study to assess the contribution of her/his participation in the state FFA Forestry Career Development Event (CDE) toward the development of selected employability skills. We are asking for your permission to allow your daughter/son to participate. If you grant permission, your daughter/son will be given a brief questionnaire to complete at the conclusion of the state CDE.

Any information obtained in connection with this study will remain confidential. Your daughter/son's responses will not be linked to her/his name or appear in any report of this study. If you have any questions or concerns about your daughter/son's participation in this study please feel free to contact me by email at dsbkb4@mizzou.edu or by phone at (573) 694-9641.

Participation in this study is completely voluntary. Consent or refusal to participate in this study will in no way affect your daughter/son's relationship with the University of Missouri. For more information concerning the rights of research participants you may contact the MU Campus Institutional Review Board by phone at 573-882-9585 or by mail at 483 McReynolds, University of Missouri, Columbia, MO 65211.

Respectfully,

Deanna Boardman
Research Assistant

Bryan L. Garton
Professor of Agricultural Education

Sign below to indicate your consent to allow your daughter/son to participate in the study. PLEASE return this document to your daughter/son's agriculture teacher.

_____ _____
Please print daughter/son's name School Name

_____ _____
Signature of Parent or Legal Guardian Date

PARENTAL CONSENT

Dear Parent/Guardian:

Your daughter/son is invited to participate in a study to assess the contribution of her/his participation in the state FFA Horse Evaluation Career Development Event (CDE) toward the development of selected employability skills. We are asking for your permission to allow your daughter/son to participate. If you grant permission, your daughter/son will be given a brief questionnaire to complete at the conclusion of the state CDE.

Any information obtained in connection with this study will remain confidential. Your daughter/son's responses will not be linked to her/his name or appear in any report of this study. If you have any questions or concerns about your daughter/son's participation in this study please feel free to contact me by email at dsbkb4@mizzou.edu or by phone at (573) 694-9641.

Participation in this study is completely voluntary. Consent or refusal to participate in this study will in no way affect your daughter/son's relationship with the University of Missouri. For more information concerning the rights of research participants you may contact the MU Campus Institutional Review Board by phone at 573-882-9585 or by mail at 483 McReynolds, University of Missouri, Columbia, MO 65211.

Respectfully,

Deanna Boardman
Research Assistant

Bryan L. Garton
Professor of Agricultural Education

Sign below to indicate your consent to allow your daughter/son to participate in the study. PLEASE return this document to your daughter/son's agriculture teacher.

_____ _____
Please print daughter/son's name School Name

_____ _____
Signature of Parent or Legal Guardian Date

APPENDIX D:

REMINDER EMAIL TO ADVISORS

Dear Ag Sales CDE Advisor,

This is a pleasant reminder to collect parental consent forms from the members of your Ag Sales teams so they will have the opportunity to complete a questionnaire that will assess the contribution of participating in the Ag Sales CDE toward their development of employability skills. For further clarification on this process, please read the previous message sent to you below.

Again, your help is greatly appreciated!

THANK YOU!

Bryan L. Garton, MU Professor of Agricultural Education
Deanna Boardman, Research Assistant

ORIGINAL MESSAGE:

Dear Ag Sales CDE Advisor,

CONGRATULATIONS to your Ag Sales team on qualifying for the 2008 State Career Development Event competition!

Have you ever wondered how participating in CDEs contribute to your students' personal growth and development? Have you ever been asked by your teaching colleagues, parents or even students, how participation in CDEs prepare students for their future careers? It is with these questions in mind that we're investigating the contribution of participating in the Ag Sales CDE toward the development of students' employability skills.

At the conclusion of the state competition, participants will be asked to complete a brief questionnaire that will ask them to assess the contribution of participating in the event had toward the development of selected employability skills.

Our goal is for each participant at the state Ag Sales competition to have an equal opportunity to provide input that will be collectively shared with secondary agriculture teachers. Since many of the students will be under the age of 18, we are asking for your help in collecting the necessary parental consent for them to complete the questionnaire.

Attached to this message, is a parental consent form (PDF) that we need your help in distributing and collecting from the members of your team. Please print a copy of the consent form for each team member, have them secure their parent's permission, then, bring the consent forms to check-in at the state Ag Sales CDE.

Your help is greatly appreciated and will contribute to the success in answering the questions proposed at the beginning of this message.

THANK YOU for your help!

Bryan L. Garton, MU Professor of Agricultural Education
Deanna Boardman, Research Assistant

Dear Forestry CDE Advisor,

This is a pleasant reminder to collect parental consent forms from the members of your Forestry team so they will have the opportunity to complete a questionnaire that will assess the contribution of participating in the Forestry CDE toward their development of employability skills. For further clarification on this process, please read the previous message sent to you below.

Again, your help is greatly appreciated!

THANK YOU!

Bryan L. Garton, MU Professor of Agricultural Education
Deanna Boardman, Research Assistant

ORIGINAL MESSAGE:

Dear Forestry CDE Advisor,

CONGRATULATIONS to your Forestry team on qualifying for the 2008 State Career Development Event competition!

Have you ever wondered how participating in CDEs contribute to your students' personal growth and development? Have you ever been asked by your teaching colleagues, parents or even students, how participation in CDEs prepare students for their future careers? It is with these questions in mind that we're investigating the contribution of participating in the Forestry CDE toward the development of students' employability skills.

At the conclusion of the state competition, participants will be asked to complete a brief questionnaire that will ask them to assess the contribution of participating in the event had toward the development of selected employability skills.

Our goal is for each participant at the state Forestry competition to have an equal opportunity to provide input that will be collectively shared with secondary agriculture teachers. Since many of the students will be under the age of 18, we are asking for your help in collecting the necessary parental consent for them to complete the questionnaire.

Attached to this message, is a parental consent form (PDF) that we need your help in distributing and collecting from the members of your team. Please print a copy of the consent form for each team member, have them secure their parent's permission, then, bring the consent forms to check-in at the state Forestry CDE.

Your help is greatly appreciated and will contribute to the success in answering the questions proposed at the beginning of this message.

THANK YOU for your help!

Bryan L. Garton, MU Professor of Agricultural Education
Deanna Boardman, Research Assistant

Dear Horse Evaluation CDE Advisor,

This is a pleasant reminder to collect parental consent forms from the members of your Horse Evaluation team so they will have the opportunity to complete a questionnaire that will assess the contribution of participating in the Horse Evaluation CDE toward their development of employability skills. For further clarification on this process, please read the previous message sent to you below.

Again, your help is greatly appreciated!

THANK YOU!

Bryan L. Garton, MU Professor of Agricultural Education
Deanna Boardman, Research Assistant

ORIGINAL MESSAGE:

CONGRATULATIONS to your Horse Evaluation team on qualifying for the 2008 State Career Development Event competition!

Have you ever wondered how participating in CDEs contribute to your students' personal growth and development? Have you ever been asked by your teaching colleagues, parents or even students, how participation in CDEs prepare students for their future careers? It is with these questions in mind that we're investigating the contribution of participating in the Horse Evaluation CDE toward the development of students' employability skills.

At the conclusion of the state competition, participants will be asked to complete a brief questionnaire that will ask them to assess the contribution of participating in the event had toward the development of selected employability skills.

Our goal is for each participant at the state Horse Evaluation competition to have an equal opportunity to provide input that will be collectively shared with secondary agriculture teachers. Since many of the students will be under the age of 18, we are asking for your help in collecting the necessary parental consent for them to complete the questionnaire.

Attached to this message, is a parental consent form (PDF) that we need your help in distributing and collecting from the members of your team. Please print a copy of the consent form for each team member, have them secure their parent's permission, then, bring the consent forms to check-in at the state Horse Evaluation CDE.

Your help is greatly appreciated and will contribute to the success in answering the questions proposed at the beginning of this message.

THANK YOU for your help!

Bryan L. Garton, MU Professor of Agricultural Education
Deanna Boardman, Research Assistant

APPENDIX E:

PERCIEVED EMPLOYABILITY SKILL INSTRUMENT DISTRIBUTED TO CAREER DEVELOPMENT EVENT PARTICIPANTS

School: _____
Contestant Letter/Number: _____

Dear Agricultural Sales CDE Participant,

The purpose of this questionnaire is to assess how your participation in the agricultural sales CDE contributed to your development of selected employability skills. This questionnaire will remain confidential and only group data will be reported. Information that is acquired will be shared with teachers and other stakeholders interested in how this CDE contributes to your personal growth.

Part I: Please respond to the following items by **circling the response** that most adequately reflects your perception of how participation in the agricultural sales CDE contributed to your development of each employability skill.

Sample Question	Contribution				
	Extreme	Major	Moderate	Minor	None
#. Ability to meet new people	4	(3)	2	1	0
This respondent perceived his/her participation in the agricultural sales CDE to be a major contribution to the development of his/her ability to meet new people.					

Employability Skills	Contribution				
	Extreme	Major	Moderate	Minor	None
Problem Solving and Analytic Skills					
1. Identifying problems	4	3	2	1	0
2. Prioritizing problems	4	3	2	1	0
3. Solving problems	4	3	2	1	0
4. Contributing to group problem solving	4	3	2	1	0
5. Identifying essential components of the problem	4	3	2	1	0
6. Sorting out the relevant data to solve the problem	4	3	2	1	0
Decision-Making Skills					
7. Making decisions in a short time period	4	3	2	1	0
8. Assessing long-term effects of decisions	4	3	2	1	0
9. Making decisions on the basis of thorough analysis of the situation	4	3	2	1	0
10. Recognizing the effects of decisions to be made	4	3	2	1	0
Organization and Time Management					
11. Establishing the critical events to be completed	4	3	2	1	0
12. Assigning/delegating responsibility	4	3	2	1	0
13. Monitoring progress against the plan	4	3	2	1	0
14. Integrating strategic considerations in the plans made	4	3	2	1	0
15. Revising plans to include new information	4	3	2	1	0

Employability Skills	Contribution				
	Extreme	Major	Moderate	Minor	None
16. Setting priorities	4	3	2	1	0
17. Allocating time efficiently	4	3	2	1	0
18. Managing/overseeing several tasks at once	4	3	2	1	0
19. Meeting deadlines	4	3	2	1	0
Oral Communication					
20. Conveying information one-to-one	4	3	2	1	0
21. Making effective business presentations	4	3	2	1	0
Listening					
22. Listening attentively	4	3	2	1	0
23. Responding to others' comments during a conversation	4	3	2	1	0
Interpersonal Relations					
24. Establishing good rapport with subordinates	4	3	2	1	0
25. Empathizing with others	4	3	2	1	0
26. Understanding the needs of others	4	3	2	1	0
Creativity, Innovation, and Change					
27. Providing novel solutions to the problems	4	3	2	1	0
28. Adapting to situations of change	4	3	2	1	0
29. Initiating change to enhance productivity	4	3	2	1	0
Ability to Conceptualize					
30. Combining relevant information from a number of sources	4	3	2	1	0
31. Applying information to new or broader contexts	4	3	2	1	0
32. Integrating information into more general contexts	4	3	2	1	0
Motivation-Personal Strengths					
33. Maintaining a high energy level	4	3	2	1	0
34. Functioning at an optimal level of performance	4	3	2	1	0
35. Responding positively to constructive criticism	4	3	2	1	0
36. Maintaining a positive attitude	4	3	2	1	0
37. Functioning well in stressful situations	4	3	2	1	0
38. Ability to work independently	4	3	2	1	0

Part II: Please answer the questions below by placing an "✓" in the appropriate ☐.

38. What is your gender? ☐ Male ☐ Female

39. What is your academic level? ☐ Freshman ☐ Sophomore ☐ Junior ☐ Senior

40. How many years have you been enrolled in agriculture? ☐ 1 ☐ 2 ☐ 3 ☐ 4

41. Are you currently, or have you previously been, enrolled in the Agricultural Sales & Marketing course? ☐ Yes ☐ No

42. What are your plans following high school?

☐ Attend a 4 year college ☐ Attend Trade/Technical school ☐ Pursue Employment

☐ Attend a 2 year college ☐ Enter the Military ☐ Other

School: _____

Contestant Letter/Number: _____

Dear Forestry CDE Participant,

The purpose of this questionnaire is to assess how your participation in the forestry CDE contributed to your development of selected employability skills. This questionnaire will remain confidential and only group data will be reported. Information that is acquired will be shared with teachers and other stakeholders interested in how this CDE contributes to your personal growth.

Part I: Please respond to the following items by **circling the response** that most adequately reflects your perception of how participation in the forestry CDE contributed to your development of each employability skill.

Sample Question	Contribution				
	Extreme	Major	Moderate	Minor	None
#. Ability to meet new people	4	(3)	2	1	0
This respondent perceived his/her participation in the forestry CDE to be a major contribution to the development of his/her ability to meet new people.					

Employability Skills	Contribution				
	Extreme	Major	Moderate	Minor	None
Problem Solving and Analytic Skills					
39. Identifying problems	4	3	2	1	0
40. Prioritizing problems	4	3	2	1	0
41. Solving problems	4	3	2	1	0
42. Identifying essential components of the problem	4	3	2	1	0
43. Sorting out the relevant data to solve the problem	4	3	2	1	0
Decision-Making Skills					
44. Making decisions in a short time period	4	3	2	1	0
45. Assessing long-term effects of decisions	4	3	2	1	0
46. Making decisions on the basis of thorough analysis of the situation	4	3	2	1	0
47. Recognizing the effects of decisions to be made	4	3	2	1	0
Organization and Time Management					
48. Establishing the critical events to be completed	4	3	2	1	0
49. Setting priorities	4	3	2	1	0
50. Allocating time efficiently	4	3	2	1	0
51. Meeting deadlines	4	3	2	1	0
Oral Communication					

Employability Skills	Contribution				
	Extreme	Major	Moderate	Minor	None
52. Conveying information one-to-one	4	3	2	1	0
53. Communicating ideas verbally to groups	4	3	2	1	0
Listening					
54. Listening attentively	4	3	2	1	0
Creativity, Innovation, and Change					
55. Initiating change to enhance productivity	4	3	2	1	0
Ability to Conceptualize					
56. Combining relevant information from a number of sources	4	3	2	1	0
57. Integrating information into more general contexts	4	3	2	1	0
Motivation-Personal Strengths					
58. Maintaining a high energy level	4	3	2	1	0
59. Functioning at an optimal level of performance	4	3	2	1	0
60. Responding positively to constructive criticism	4	3	2	1	0
61. Maintaining a positive attitude	4	3	2	1	0
62. Functioning well in stressful situations	4	3	2	1	0
63. Ability to work independently	4	3	2	1	0

Part II: Please answer the questions below by placing an "✓" in the appropriate ☐.

38. What is your gender? ☐ Male ☐ Female

39. What is your academic level? ☐ Freshman ☐ Sophomore ☐ Junior ☐ Senior

40. How many years have you been enrolled in agriculture? ☐ 1 ☐ 2 ☐ 3 ☐ 4

41. Are you currently, or have you previously been, enrolled in the Agricultural Sales & Marketing course?

☐ Yes ☐ No

42. What are your plans following high school?

☐ Attend a 4 year college ☐ Attend Trade/Technical school ☐ Pursue Employment

☐ Attend a 2 year college ☐ Enter the Military ☐ Other

School: _____
Contestant Letter/Number: _____

Dear Horse Evaluation CDE Participant,

The purpose of this questionnaire is to assess how your participation in the horse evaluation CDE contributed to your development of selected employability skills. This questionnaire will remain confidential and only group data will be reported. Information that is acquired will be shared with teachers and other stakeholders interested in how this CDE contributes to your personal growth.

Part I: Please respond to the following items by **circling the response** that most adequately reflects your perception of how participation in the horse evaluation CDE contributed to your development of each employability skill.

Sample Question	Contribution				
	Extreme	Major	Moderate	Minor	None
#. Ability to meet new people	4	(3)	2	1	0
This respondent perceived his/her participation in the horse evaluation CDE to be a major contribution to the development of his/her ability to meet new people.					

Employability Skills	Contribution				
	Extreme	Major	Moderate	Minor	None
Problem Solving and Analytic Skills					
64. Identifying problems	4	3	2	1	0
65. Prioritizing problems	4	3	2	1	0
66. Solving problems	4	3	2	1	0
67. Identifying essential components of the problem	4	3	2	1	0
68. Sorting out the relevant data to solve the problem	4	3	2	1	0
Decision-Making Skills					
69. Making decisions in a short time period	4	3	2	1	0
70. Making decisions on the basis of thorough analysis of the situation	4	3	2	1	0
71. Recognizing the effects of decisions to be made	4	3	2	1	0
Organization and Time Management					
72. Establishing the critical events to be completed	4	3	2	1	0
73. Setting priorities	4	3	2	1	0
74. Allocating time efficiently	4	3	2	1	0
75. Managing/overseeing several tasks at once	4	3	2	1	0
76. Meeting deadlines	4	3	2	1	0
Oral Communication					

Employability Skills	Contribution				
	Extreme	Major	Moderate	Minor	None
77. Conveying information one-to-one	4	3	2	1	0
78. Communicating ideas verbally to groups	4	3	2	1	0
Listening					
79. Listening attentively	4	3	2	1	0
Creativity, Innovation, and Change					
80. Adapting to situations of change	4	3	2	1	0
Ability to Conceptualize					
81. Combining relevant information from a number of sources	4	3	2	1	0
82. Applying information to new or broader contexts	4	3	2	1	0
83. Integrating information into more general contexts	4	3	2	1	0
Motivation-Personal Strengths					
84. Maintaining a high energy level	4	3	2	1	0
85. Functioning at an optimal level of performance	4	3	2	1	0
86. Responding positively to constructive criticism	4	3	2	1	0
87. Maintaining a positive attitude	4	3	2	1	0
88. Functioning well in stressful situations	4	3	2	1	0
89. Ability to work independently	4	3	2	1	0

Part II: Please answer the questions below by placing an "✓" in the appropriate ☐.

38. What is your gender? ☐ Male ☐ Female

39. What is your academic level? ☐ Freshman ☐ Sophomore ☐ Junior ☐ Senior

40. How many years have you been enrolled in agriculture? ☐ 1 ☐ 2 ☐ 3 ☐ 4

41. Are you currently, or have you previously been, enrolled in the Agricultural Sales & Marketing course?

    ☐ Yes ☐ No

42. What are your plans following high school?

    ☐ Attend a 4 year college ☐ Attend Trade/Technical school ☐ Pursue Employment

    ☐ Attend a 2 year college ☐ Enter the Military ☐ Other

APPENDIX F:

PURPOSE, OBJECTIVES AND SCORING PROCEDURES FOR SELECTED CAREER DEVELOMENT EVENTS PROVIDED BY THE MISSOURI DEPARTMENT OF ELEMENTARY AND SECONDARY EDUCATION

Agricultural Sales

The purpose of the Agricultural Sales Career Development Event is to provide students with an opportunity to learn and apply the basic skills necessary for career opportunities in the sales field. Sales are an essential part of a market economy. The agriculture, food, and fiber industry benefits by having individuals with sales and communication skills, both for inputs for production and the marketing of the products.

Objectives:

1. Explain and demonstrate the professional sales process in agribusiness.
2. Utilize knowledge of advertising and promotion in the professional sales process.
3. Compose a resume that follows the standard "rules" of resume development.
4. Demonstrate the ability to interview for an agricultural sales position within a specific employment area.
5. Identify career options in agricultural sales, determine specific entry requirements, and create a job description.

Event Scoring:

The agricultural sales career development event consists of the following components:

Agricultural Sales Event	Individual Score
Product sales presentation	200
Job description (40 points) and interview practicum (60)	100
Objective written test	100
Total	400

Forestry

The purpose of the forestry career development event is designed to stimulate students' interest in forestry and the principles and benefits of forest resource management.

Objectives:

1. Ability to understand and have a basic knowledge of forestry and agroforestry principles.
2. Ability to identify trees common to Missouri.
3. Ability to recognize tools and equipment and their uses in forest management.
4. Ability to inventory standing timber.
5. Ability to understand timber stand improvement principles.
6. Ability to interpret topographic maps and understand legal descriptions.

Event Scoring:

The forestry career development event consists of the following components:

Forestry Event	Individual Score
Written Exam	100
Tree Identification	100
Equipment Identification	40
Timber Cruising	100
Timber Stand Improvement	100
Map Reading - Legal Descriptions	60
Total	500

Horse Evaluation

The purpose of this contest is to stimulate high school agriculture students to learn and study equine science, selection, management, and production.

Objectives:

1. Identify and evaluate all types and/or breeds of horses.
2. Develop skills in the selection and management of horses.
3. Identify and evaluate conformation traits and performance of horses.
4. Provide a set of oral reasons for placing a halter and performance class of horses.
5. Develop a proficiency to communicate effectively in the terminology of the equine industry.

Event Scoring:

The horse evaluation career development event consists of the following components:

Horse Evaluation Event	Individual Points
Written Exam	100
Halter Classes	150
Performance Classes	100
Sets of Oral Reasons	100
Total	450

APPENDIX G:

PARTICIPANTS' PERCEIVED CONTRIBUTION TO THE DEVELOPMENT OF EMPLOYABILITY SKILLS

Table 25
Contribution of Employability Skills by Agricultural Sales Participants (n = 148)

Employability Skills	M	SD
Problem Solving and Analytic Skills		
Identifying problems	2.72	.70
Prioritizing problems	2.90	.70
Solving problems	2.92	.75
Contributing to group problem solving	2.90	.74
Identifying essential components of the problem	2.86	.70
Sorting out the relevant data to solve the problem	2.78	.68
Decision-Making Skills		
Making decisions in a short time period	3.33	.78
Assessing long-term effects of decisions	3.00	.78
Making decisions on the basis of thorough analysis of the situation	3.03	.77
Recognizing the effects of decisions to be made	3.13	.80
Organization and Time Management		
Establishing the critical events to be completed	3.13	.72
Assigning/delegating responsibility	3.02	.69
Monitoring progress against the plan	2.83	.72
Integrating strategic considerations in the plans made	2.86	.79
Revising plans to include new information	3.16	.63
Setting priorities	3.31	.63
Allocating time efficiently	3.19	.65
Managing/overseeing several tasks at once	3.08	.75
Meeting deadlines	3.28	.74
Oral Communication		
Conveying information one-to-one	3.46	.78
Making effective business presentations	3.48	.72
Listening		
Listening attentively	3.42	.72
Responding to others' comments during a conversation	3.47	.72
Interpersonal Relations		
Establishing good rapport with subordinates	3.32	.65
Empathizing with others	3.23	.72
Understanding the needs of others	3.38	.66
Creativity, Innovation, and Change		
Providing novel solutions to the problems	3.06	.76
Adapting to situations of change	3.21	.76
Initiating change to enhance productivity	3.11	.68
Ability to Conceptualize		
Combining relevant information from a number of sources	2.88	.83
Applying information to new or broader contexts	2.92	.78
Integrating information into more general contexts	2.86	.80

Motivation-Personal Strengths		
Maintaining a high energy level	3.40	.73
Functioning at an optimal level of performance	3.34	.69
Responding positively to constructive criticism	3.42	.69
Maintaining a positive attitude	3.50	.71
Functioning well in stressful situations	3.39	.73
Ability to work independently	3.42	.64
Summated	3.15	.44

Note. Scale: 0.00 – 0.50 = No Contribution, 0.51 – 1.50 = Minor Contribution, 1.51 – 2.50 = Moderate Contribution, 2.51 – 3.50 = Major Contribution, 3.51 – 4.00 = Extreme Contribution

Table 26
Contribution of Employability Skills by Forestry Participants (n = 117)

Employability Skill	M	SD
Problem Solving and Analytic Skills		
Identifying problems	2.43	.69
Prioritizing problems	2.49	.74
Solving problems	2.60	.79
Identifying essential components of the problem	2.52	.74
Sorting out the relevant data to solve the problem	2.55	.80
Decision-Making Skills		
Making decisions in a short time period	2.89	.81
Assessing long-term effects of decisions	2.75	.74
Making decisions on the basis of thorough analysis of the situation	2.74	.76
Recognizing the effects of decisions to be made	2.69	.89
Organization and Time Management		
Establishing the critical events to be completed	2.54	.87
Setting priorities	2.72	.87
Allocating time efficiently	2.70	.84
Meeting deadlines	2.66	1.02
Conveying information one-to-one	2.53	.92
Communicating ideas verbally to groups	2.40	1.03
Listening		
Listening attentively	2.97	.95
Creativity, Innovation, and Change		
Initiating change to enhance productivity	2.70	.80
Ability to Conceptualize		
Combining relevant information from a number of sources	2.75	.83
Integrating information into more general contexts	2.68	.81
Motivation-Personal Strengths		
Maintaining a high energy level	2.76	.90
Functioning at an optimal level of performance	2.85	.85
Responding positively to constructive criticism	2.77	.88
Maintaining a positive attitude	2.85	.93
Functioning well in stressful situations	2.74	.90
Ability to work independently	3.11	.86
Summated	2.70	.55

Note. Scale: 0.00 – 0.50 = No Contribution, 0.51 – 1.50 = Minor Contribution, 1.51 – 2.50 = Moderate Contribution, 2.51 – 3.50 = Major Contribution, 3.51 – 4.00 = Extreme Contribution

Table 27
Perceived Contribution of Employability Skills Constructs by Horse Evaluation

Employability Skills and Constructs	M	SD
Problem Solving and Analytic Skills		
Identifying problems	2.80	.69
Prioritizing problems	2.69	.76
Solving problems	2.72	.81
Identifying essential components of the problem	2.70	.74
Sorting out the relevant data to solve the problem	2.75	.76
Decision-Making Skills		
Making decisions in a short time period	3.09	.85
Making decisions on the basis of thorough analysis of the situation	3.02	.73
Recognizing the effects of decisions to be made	2.84	.87
Organization and Time Management		
Establishing the critical events to be completed	2.87	.79
Setting priorities	2.96	.83
Allocating time efficiently	2.80	.90
Managing/overseeing several tasks at once	2.86	.96
Meeting deadlines	2.93	.98
Conveying information one-to-one	2.85	.88
Communicating ideas verbally to groups	3.05	.86
Listening		
Listening attentively	3.06	.81
Creativity, Innovation, and Change		
Adapting to situations of change	2.90	.79
Ability to Conceptualize		
Combining relevant information from a number of sources	2.79	.71
Applying information to new or broader contexts	2.70	.74
Integrating information into more general contexts	2.70	.80
Motivation-Personal Strengths		
Maintaining a high energy level	3.01	.83
Functioning at an optimal level of performance	3.05	.80
Responding positively to constructive criticism	3.11	.82
Maintaining a positive attitude	3.18	.82
Functioning well in stressful situations	2.94	.86
Ability to work independently	3.22	.82
Summated	2.91	.48

Note. Scale: 0.00 – 0.50 = No Contribution, 0.51 – 1.50 = Minor Contribution, 1.51 – 2.50 = Moderate Contribution, 2.51 – 3.50 = Major Contribution, 3.51 – 4.00 = Extreme Contribution