

ARGUMENTATION SKILLS OF PARTICIPANTS IN THE FLORIDA 4-H AND FFA
HORSE EVALUATION CONTEST

By

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To my Mom, Dad, Sister, and my memaw, Margaret Ann Lee

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LIST OF ABBREVIATIONS

CDE	CAREER DEVELOPMENT EVENT
CTE	CAREER AND TECHNICAL EDUCATION
FFA	NATIONAL FFA ORGANIZATION
NCEE	NATIONAL CENTER FOR EXCELLENCE IN EDUCATION
OECD	THE ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT
USDE	UNITED STATES DEPARTMENT OF EDUCATION

Abstract of Thesis Presented to the Graduate School
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The purpose of this study was to determine the extent to which students used argumentation skills when participating in the horse evaluation career development event (CDE) and contest. This study was a descriptive correlational design. The population of the study was all the participants in the 2013 Florida State FFA and 4-H horse evaluation CDE and contest ($N = 65$).

Correlations of variables in the study were used to discover the relationships between argumentation scores and performance in the horse evaluation CDE and contest. Participants' argumentation scores were also scored using an adapted version of the Schen (2007) argumentation rubric. Participants competed in the horse evaluation contest and CDE as facilitated by the Animal Science Department at the University of Florida. The oral reasons of the participants were audio recorded and analyzed at a later date by the researcher.

Participants mean argumentation scores ranged from 11.25 ($SD = 3.26$) to 12.63 ($SD = 3.19$). Negligible to low relationships between argumentation and placing scores were reported. Argumentation and reasons scores relationships ranged from low to

substantial. Reasons scores and placing scores reported low to moderate relationships, while the total argumentation score and total reasons score had a very high relationship.

Furthermore, this study evaluated the participants' abilities to create effective arguments using the constructs within the Schen (2007) rubric: claims, grounds and warrants, counterarguments, and rebuttals. Participants made claims that were generally broad or weak. Participants excelled at making grounds and warrants that supported the claims with data. Finally, participants provided a wide range of counterarguments and produced effective rebuttals. Results indicated that argumentation skills do exist among participants within the study. Recommendations were presented for secondary agricultural educators and horse judging coaches, event coordinators, and future research. Future studies should be conducted that investigate if argumentation skills developed in a CDE are transferrable to the school-based classroom.

CHAPTER 1 INTRODUCTION

Background and Setting

Fifty-six years after the launching of Sputnik, thirty years after the publishing of *A Nation At Risk* (1983), twelve years after the passage of No Child Left Behind Act (2001), and two years after the passage of *Race to the Top* (2011), student achievement, success, and education reforms have continued to be hot topics within the national media and political arena.

According to the Organisation for Economic Cooperation and Development's (OECD) Programme for International Student Assessment (PISA, 2009) American students ranked sixteenth in overall OECD average behind countries such as Korea, Japan, Canada, and the Netherlands. According to the Trends in International Mathematics and Science Study (TIMSS, 2007) assessment, American fourth graders ranked 11th in mathematical skills and eighth graders ranked ninth among the countries that participated. Despite the Condition of Education Report that stated American youth are making small increases in reading, mathematics, and overall academic achievement, the achievement and performance of American youth on international comparisons were still too low (USDE, 2012). Casner-Lotto and Barrington (2006) voiced concern that graduating seniors were deficient in both basic skills and transferable skills needed at entry level positions within the workforce.

This need for success within basic core areas has led to the adoption of the Common Core Curriculum among forty-five states and five U.S territories (National Governors Association Center for Best Practices, Council of Chief State School Officers, 2010). The amount of time students must dedicate to core curricular areas has

increased while the amount of time students can dedicate to career and technical education or other areas of interest has significantly decreased (Association for Career and Technical Education, 2012). High stakes testing, such as the State of Texas Assessments of Academic Readiness (STAAR), End-of-Course assessments (EOC) (TEA, 2013), and the Florida Comprehensive Assessment Test (FCAT) have increased teacher and school district accountability, and an emphasis on college and career preparedness has become prevalent in education. Teacher salary has become subject to student performance on standardized tests (FlaglerLive, 2012).

While education has focused on the need for American youth to compete globally, researchers have stated that students need transferable skills which have not been specifically taught within a formal setting. In a report evaluating students' preparedness for the workforce after high school, Casner-Lotto and Barrington (2006) stated that high school students needed to develop more transferrable skills before entering the workplace. Among these skills, the authors identified certain transferable skills, including those that promote critical thinking and problem solving, professionalism and work ethic, teamwork and collaboration, diversity, leadership, lifelong learning and self-direction, ethics and social responsibility, written communications, and proficiency with information technology.

Many teachers in core areas have tried to implement teaching practices that nurture the use of transferrable skills while also increasing the amount of content knowledge students learn. Teachers have difficulty balancing when to use formal authority teaching methods and when to use learner centered teaching methods (USC, 2012). The University of South Carolina's Center for Teaching Excellence recognized

the pros and cons for various teaching methods and has encouraged teachers to create their own style of teaching. However, teachers have struggled to find the balance among being able to create learning environments that facilitate student learning, the need to cover large quantities of content, and classroom management (USC, 2012). The literature-base contends that students gain a deeper understanding of content when student-centered teaching methods are used (USC, 2012).

One tool that can be used to increase student learning of a topic and increase communication skills is called argumentation (Zohar & Nemet, 2002). Argumentation has been used within the science discipline. The science community built upon the literature and the use of argumentation to increase students' understanding and interest in scientific content. Argumentation has been stated by researchers as being a vital part of learning scientific knowledge. Argumentation has emphasized the use of language to increase scientific literacy, which involves the abilities to comprehend, interpret, analyze, and criticize scientific text (Cavegnetto & Hand, 2012).

Argumentation involves the transferrable skills researchers and industry leaders have stated that students need. Zohar and Nemet (2001) stated that "argumentation skills are often applied in everyday life as people participate in, listen to, or assess arguments. [Argumentation] involves reasoning about causes and consequences and about advantages and disadvantages, or pros and cons, of particular propositions or decision alternatives" (pg. 38).

As argumentation and student-based learning have gained popularity within the core curricula, career and technical education has integrated components of core curricula and aligned with industry standards by teaching skills and competencies

needed within a specific industry. The Association for Career and Technical Education (2012) stated that career and technical education can provide students with opportunities to increase learning and focus on specific career areas that are not being fulfilled.

School-based agricultural education (SBAE) has provided a context that supports the delivery of content knowledge and STEM-based concepts as well as transferrable skills captured through the lens of agriculture (Dailey, Conroy, & Shelley-Tolbert, 2001). SBAE has incorporated experiential learning (Roberts, 2006), with FFA offering unique opportunities for learning by doing. The three circle model of SBAE, that incorporates the classroom and lab, supervised agricultural experiences, and participation in the FFA, has allowed students to practice their soft and transferrable skills through participation in the complete agricultural education program.

Similarly, 4-H focuses on skill acquisition through experiential learning, and is the largest out-of-school youth organization that focuses on teaching life skills (Hendricks, 1998). The Teaching Life Skills Model focuses on four main areas: Head, Heart, Hands, and Health (Harder, 2006). 4-H aims to develop 35 life skills in the four areas through competition and leadership opportunities in agriculture and home economics in non-formal settings (Boyd, Heffing, & Briers, 1992; Harder, 2006).

FFA Career Development Events (CDEs) have helped achieve the mission of the FFA to develop premier leadership, personal growth, and career success (Rayfield, 2006). CDEs have allowed students to showcase content knowledge and acquired skills within a competitive venue. CDEs have also required students to apply knowledge, solve problems, and make and defend decisions.

In the Horse Judging CDE students are required to evaluate horses based on breed and event characteristics. The purpose of the horse judging event, according to the National FFA Organization (2012), has been to:

“(1) stimulate interest in equine science selection, management, and production, (2) advance knowledge in selection and management of horses, (3) develop proficiency in communicating effectively in the terminology of the industry, and (4) provide opportunity to evaluate, make a decision, and justify those decisions on conformation traits and performance of horses” (National FFA, 2012, pg. 1, para. 1).

However, judging events were not solely started by the FFA. According to Tenney (1977), agricultural educators began hosting judging contests soon after the passage of the Smith-Hughes Act of 1917. Rayfield (2006) stated that the first national judging competition designed specifically for secondary school agriculture students was in 1925 at the National Dairy Show in Indianapolis, Indiana. Soon after, the American Royal Livestock and Horse Show’s national livestock judging contest was established, as was the National Congress of Vocational Agriculture Students judging contest.

While these events have reinforced participants’ content knowledge, research has also indicated that participants have gained valuable transferable skills through participation in CDEs. Studies have also revealed that competing in FFA has allowed students to receive recognition and provide student motivation through goals, and the completion of tasks (Vaughn, Keith, & Lockaby, 1999).

Statement of the problem

As Casner-Lotto and Barrington (2006) observed, students have been graduating from high school with underdeveloped thinking and reasoning skills that are crucial to their future academic, work, and life success. FFA, as part of SBAE, has offered many

opportunities for students to use thinking and reasoning skills. Career Development Events (CDEs) in the FFA, in particular, have required students to make decisions and defend choices. Yet, the potential of CDEs for enhancing students' thinking skills has not been examined.

The fifth priority of the 2011-2015 National Research Agenda for Agricultural Education has focused on Effective and Efficient Educational Programs that “will meet the academic, career, and developmental needs of diverse learners in all settings and at all levels. “The key objective has been to provide data describing the impact of educational programs and outreach efforts at all levels” (Doerfert, 2011, p. 2).

Despite research identifying several positive attributes of participation in school-based agricultural science programs, CDEs, FFA, and the complete agricultural program, a clear identification of skills that are taught and developed through participation in the Horse Judging CDE and contest is needed.

Purpose of the Study

The purpose of this study was to determine the extent to which students used argumentation skills when participating in the horse evaluation CDE and contest. The three objectives were to:

1. Determine the argumentation skills used by participants in a horse evaluation CDE and contest.
2. Examine the relationship between argumentation skill scores in the horse evaluation CDE and contest including: reasons scores, placing of classes, and overall scores.
3. Describe the argumentation levels of participants in the horse evaluation contest.

Significance of the study

If participants in this study have middle to high argumentation scores, agricultural educators will have empirical evidence to support the importance of the event and value

of this CDE and similar CDEs, preparation time for the event, and the complete SBAE program. Agricultural educators can present this information to administration to gain support for spending time in school and after school time on this event, given evidence that this program contributes to the development of students' thinking skills. Secondly, extension and agricultural education professionals may use the results found within the study to investigate other events which may foster argumentation skills amongst participants.

Definition of Terms

- **Argumentation Score:** the score students earn when evaluated on an argumentation rubric. This study will use the rubric of Schen's (2007) doctoral dissertation.
- **Argumentation skill:** the ability to develop statements that provide support for a conclusion (Halpern, 1989). In this study, argumentation skill was defined as the score on a scoring rubric developed by Schen (2007).
- **Career Development Event (CDE):** a competitive FFA event that "help[s] students develop the abilities to think critically, communicate clearly, and perform effectively in a competitive job market" (National FFA Organization, 2012).
- **Content Knowledge:** "knowledge about the actual subject matter that is to be learned" (Mishra & Koehler, 2006, p. 1026). In this study, content knowledge refers to horse industry knowledge and was assessed via a test distributed to the participants during the horse judging contest.
- **Ethnicity:** categorized as Caucasian, Hispanic/Latino, African American/Black, Asian/Pacific Islander or other.
- **FFA:** "an educational, nonprofit, nonpolitical youth organization for students enrolled in school-based agricultural education programs. The purpose of FFA is to develop leadership, personal growth, and career success in its members and an intra-curricular element of agricultural education in public schools" (Phipps et al., 2008)
- **Horse Judging:** "evaluating a horse's form as it relates to function, and comparing it to the ideal as well as to other horses," (University of Florida, Animal Science Department, para. 2). In this study horse judging and horse evaluation are the same thing.

- Horse Judging Clinic: an educational workshop centered around helping participants understand the different aspects of a horse judging competition and increase knowledge in selected areas.
- Horse Judging Participant: a member of 4-H or FFA who competes in the horse judging contest.
- Oral Reasons: “a set of oral reasons is a one- to two-minute oral presentation made by a horse-judging contestant to an official, during which the contestant justifies how he or she placed a specific class of horses” (Hathway, 2008, p. 1).
- Overall Horse Judging Score: the score which a student obtains after adding reasons scores and placing scores.
- Reasons Score: the score which a judge gives a student after listening to his or her oral reasons.
- Reasoning Skills: those processes basic to cognition of all forms (Purdue University, 2012).
- School-Based Agricultural Education: middle and high school programs teaching agriculture as part of a three circle model which includes classroom instruction, as well as FFA and supervised agricultural experiences (SAE) (Phipps, et al., 2008).
- Transferrable Skills: skills and abilities that can be applied in multiple settings. Examples include communication, critical thinking, teamwork, and work ethic. This study identifies transferrable skills, soft skills, and life skills as being synonymous

Limitations of Study

In this study, the participants included those who advanced to the state level horse judging competition in 2013 because participants only presented oral reasons at the state CDE contest. The state CDE qualifies the top 4-H and FFA teams to advance to the national competition. Data were collected using an audio recording of the oral reasons portion of the contest. The researcher collected the contest scores from the contest coordinators.

Assumptions of Study

This study assumed that participants answered the questionnaires truthfully. This study also assumed that students competed to the best of their ability.

Chapter Summary

The Horse Evaluation CDE has been a long standing competition within FFA, requiring students to evaluate horses based on class and industry standards. The ultimate goal has been for students to demonstrate content knowledge related to the industry and encourage students to pursue careers related to the horse industry.

Horse judging presents an opportunity to competitively learn by doing and incorporate multiple transferable skills, which the job industry indicated is lacking amongst high school graduates (Cassner-Lotto & Barrington, 2006). Argumentation, according to Cavegnetto and Hand (2012), requires oral communication, critical thinking and decision making which are part of the transferrable skills Cassner-Lotto and Barrington (2006) identified. Finding tools and ways to develop this skill set outside of the classroom is needed in the United States' educational system.

The National Research Agenda (Doefert, 2011) has called for research in the areas of educational programs and the skills enhanced in students. As time and resources available decrease, the importance of research that validates student participation in FFA CDEs and other co-curricular activities increases.

This study evaluated whether participation in the horse judging program enhanced students' argumentation skills. While the study added to the literature regarding educational practices, the main goal was to explore whether argumentation was developed through participation in the horse judging program. The study will aid

agricultural educators, extension personnel, and those interested in increasing student learning in experiential settings.

CHAPTER 2 REVIEW OF LITERATURE

Chapter 1 stated the current problem with student achievement of high school graduates lack of transferable skills that are needed to be successful in today's work industry (Cassner-Lotto & Barrington, 2006). Research that links participation in programs to success in school and real-world application has become more important because accountability for school-based programs has continued to increase.

Chapter 2 presents the theory and conceptual model for this study and previous research. This study combined Observational Learning Theory (Bandura, 1986), Toulmin's Argumentation Pattern (Toulmin, 1958), and the Four Steps to Teaching Evaluation Skills (Moore, 2006). Observational learning served as a center piece to the entire study. The theory of observational learning is viewed to have an effect on all four steps in Moore's (2006) four steps to teaching evaluation skills. Toulmin's Argumentation Pattern (TAP) (1958) was utilized as the foundational model to formulating arguments.

The major variables in this study were conceptualized as youth development and skill acquisition through participation in 4-H and FFA, recruitment methods of coaches, coaching methodologies and ideas, and student motivation.

Theoretical Framework

Observational learning is based within Bandura's social cognitive learning theory (1986). Observational learning states that new knowledge, concepts, and social behaviors are learned when a person observes a model. An example of observational learning would be "young children combining phonemes to say the word "supercalifragilisticexpialidocious" (p.49) or pianists mastering Beethoven.

Observational learning states that modeling can strengthen or weaken the inhibitions over a preexisting behavior. Modeling's impact on a behavioral inhibition relies on three factors: (1) the observer's perceived ability to execute the behavior, (2) the observer's perception of whether the behavior will produce a reward or a punishment, and (3) the observer's belief that a similar consequence will happen to them. Models direct attention, solicit responses, and focus attention on different aspects of an environment (Bandura, 1986). Bandura (1986) claimed that modeling provides an effective way to convey information about rules for creating a new behavior.

Observational learning is governed by four processes:

- Attention processes: regulate exploration and perception of modeled activities,
- Retention processes: the transition of experiences into memory that will lead to the creation of new skills and patterns,
- Production processes: governs the organization of subskills into new patterns; and
- Motivation processes: determine whether observationally acquired competencies will be used or not.

Attention processes determine what is observed and what information is taken from the observed event. Factors that influence the exploration and perception of a model in the social and symbolic environment are the cognitive skills and attributes of the observer, properties of the modeled activities, human interactions, and the models that are available (Bandura, 1986).

Bandura (1986) stated that observational learning can be fragmented if modeled events occur too rapidly or are too complicated. Repeated exposures to modeled activities increase the amount of information learned. Bullock (1983) stated that modeling affects changes more rapidly and reliably when the models meet the

observer's cognitive capabilities. Bandura (1986) said the greater the cognitive skills and prior knowledge of the observer, the more the observers pick up subtleties and fine differences allowing the observers to become more proficient in learning the model. Familiarization and training allow people to recognize fine differences that the untutored would not be able to distinguish (Bandura, 1986).

Retention is an observer's ability to retain the information conveyed by the model. Bandura (1986) found that observers create mental symbols that represent the information conveyed when observing a model. These symbols are useful to retain information because the models may present too much information or irrelevant information. Bandura (1986) further stated that retaining information involves actively repeating the modeled information until the action becomes a routine. Furthermore, newly modeled actions or behaviors are more likely to be retained if they are tied to a behavior that is already known.

The third process of observational learning is the production process, where the observers use the symbolic representations to organize the actions into a new concept or activity that was modeled. Observers only learn minor parts of an action through observing the action alone. To become proficient at executing the modeled actions the observer needs to practice the action multiple times. Bandura (1986) stated the inability of self-observation creates a disconnect between the observer understanding the model and the observer's ability to reproduce the modeled action. Therefore, skilled practice and feedback allows for the observer to practice on areas that are difficult.

The final process influencing the reproduction of modeled behavior is the motivational process. Bandura (1986) stated that there are three sources of motivation

to execute a modeled behavior: direct, vicarious, and self-produced. Further, Bandura (1986) stated that “children selectively imitate the behavior that produces rewarding effect” (pg. 68). External motivators can be material benefits, enjoyable stimulations, social reactions, or rewards. Intrinsic motivators can be observer beliefs, personal standards, and perceived thoughts on positive or negative punishment. These motivators affect an observer’s motivation to learn and reproduce a modeled action.

All of these processes build upon one another to influence how the observer exhibits and matches the modeled behavior. Central to these processes is the observer’s attitudes towards the model, the benefit, cognitive skill level, and capability. Figure 2-1 depicts Bandura’s Observational Learning theory.

This study viewed Observational Learning as a prominent theory that was present within every stage of the study. As a whole, observational learning was seen as the theory behind coaching evaluation teams and the processes were a stepwise process to teaching students how to evaluate horses and construct oral reasons.

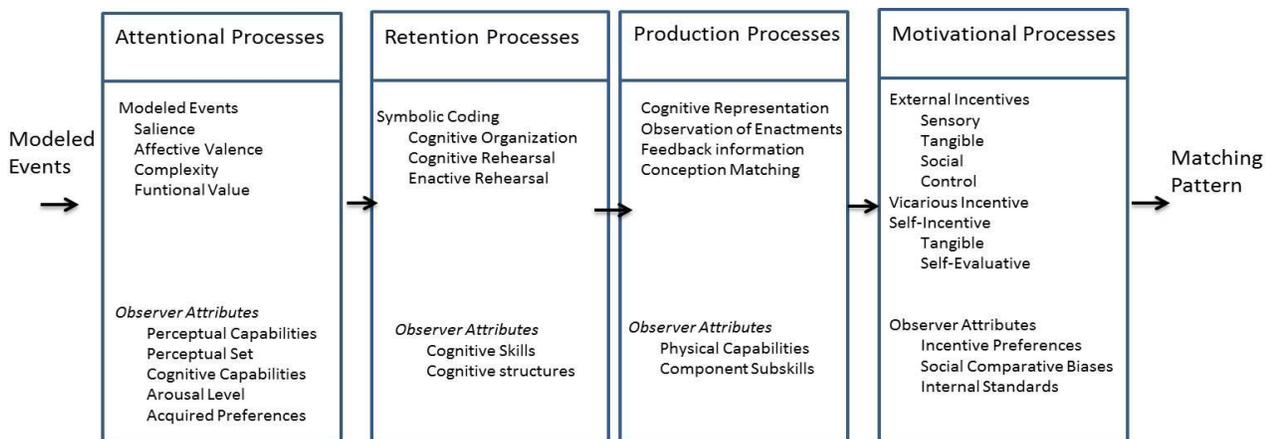


Figure 2-1. Subprocesses Governing Observational Learning (Bandura 1986)

Toulmin's Argumentation Pattern

Observational learning served as the central theory for this study, and Toulmin's Argumentation Pattern(1958) served as a model for the evaluation of students' arguments. Toulmin identified the structure of an argument through the Toulmin's Argumentation Pattern (TAP) (Figure 2-2). Toulmin (1958) identified argumentation as a connected set of a claim, supporting data, warrants, backings and rebuttals (Figure 2-2). A claim is a conclusion statement that voices the opinion or decision. The supporting data present statements that support the claim. Warrants link the data to the claim. A backing adds validity to the warrants, and rebuttals state the circumstances when the claim would not be true. Each of these constructs is identified as field invariant, meaning the general idea of each construct (claim, data, warrant, backing, and rebuttal) does not depend on the context in which the construct is placed and can be transferred to any area. However, the statements made within each construct are identified as field-dependent, meaning they have to relate to the context of the argument (Jiménez-Aleixandre, 2008). Therefore, the ideas of the constructs can be taught in any context, while the actual statements have to be in respect to the subject being argued (Jiménez-Aleixandre, 2008). Verheij (2005) deciphered a rebuttal as statements that can combat either claims, warrants, data, or the links in between any of these.

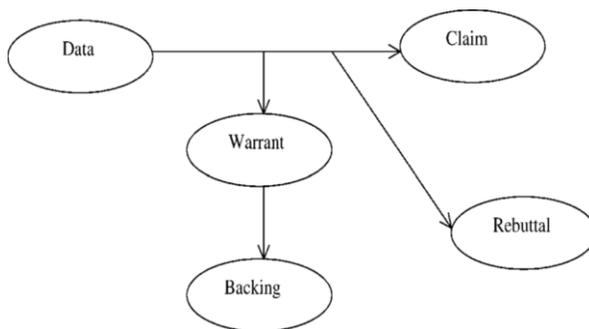


Figure 2-2. Toulmin's Argumentation Pattern (Toulimin, 1958)

Four Steps to Teaching Evaluation Skills

Moore (2006) identified four steps to effectively teaching and coaching evaluation teams. Moore (2006) stated that in the first step, knowledge, students must have a foundational knowledge of the industry. This knowledge includes terminology, industry standards, general terms, and basic anatomy and physiology.

Once students have a basic understanding of industry and terminology, students then learn the criteria for evaluating livestock or horses. Students learn factors that are important to evaluating different categories of livestock and horses and the best way to evaluate them. Students then use the criteria they have learned to evaluate the animals against the industry standards. This is the third step called criterion application.

Students complete the third step by evaluating animal classes through video, pictures, or live. This is also when students start to learn how to formulate reasons and evaluate animals against each other and compare against industry standards. Finally, in the communication of evaluation stage, students use Toulmin's Argumentation Pattern to present their placings for the class to the judge. This stage is the final step when evaluating livestock and horses, and brings together all the information.

Conceptual Model

Within the context of horse and livestock evaluation, the progression of a student's evaluation and argumentation abilities flow through many phases. This study combined Bandura's (1986) cognitive learning model, Moore's (2006) Four Steps to Teaching Evaluation Skills, and Toulmin's Argumentation Pattern (1958), as shown in Figure 2-3. In this study cognitive learning provided a base for the entire study.

Cognitive learning occurs at all levels throughout instruction, coaching, and skill acquisition. Attention processes occur as the factors that attracted a student to join the

judging team. Attractants could have been the past success of the program, a family or organizational tradition, an interest from the student, or other incentives.

Retention and production processes in this study have an interrelated impact on one another. As mentioned within the explanation of Bandura's (1986) theory, as students or observers increase in retention through rehearsal and feedback the ability to produce a modeled action becomes easier. Within the context of horse evaluation and this study, students traverse between production and retention as students learn different terminology and organization of reasons and improve on their abilities to evaluate and present oral reasons. Retention and production are affected by coaching methods, knowledge of content, and the goals set forth by the team and the coach.

Motivation is conceptualized in the study as the motivating factors for students to participate in the horse judging and livestock evaluation teams. These factors are individual goals, team goals, self-efficacy of the students participating, and finally success rates of the students in both practices and school (Jones, 2011, & Russell, 2007).

The cognitive learning theory is implemented throughout the entire model. Moore (2006) stated that there are four steps to teaching students to evaluate livestock and horses. These four steps are conceptualized as a staircase. As the students develop their abilities in each of Moore's (2006) steps the students' argumentation skills may increase as well.

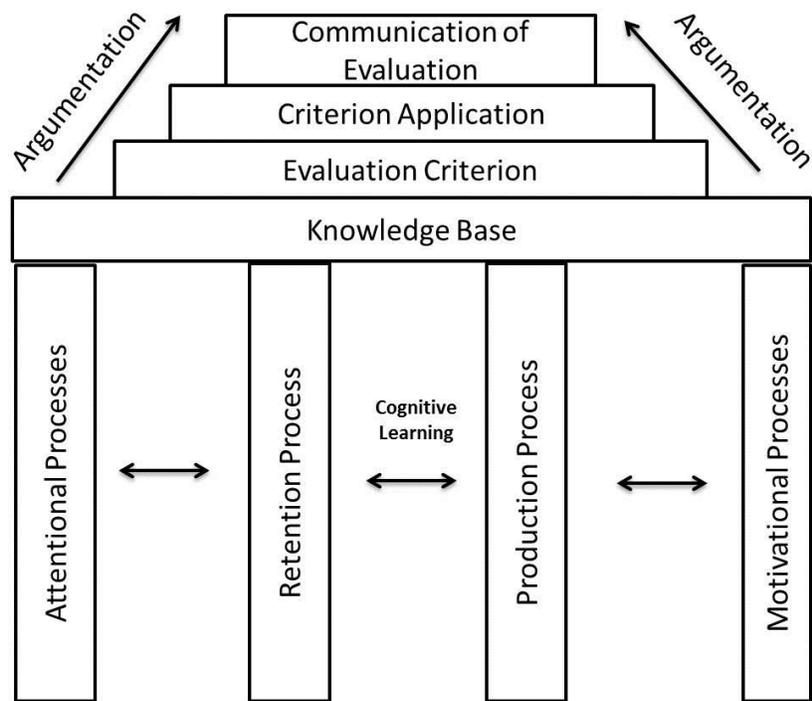


Figure 2-3. Conceptual Framework. Adapted from The Cognitive Learning Model (Bandura, 1986), Toulmin’s Argumentation Pattern (Toulmin, 1958), and Moore’s (2006) Four Steps to Teaching Evaluation Skill

Previous Research

Attentional Processes

According to observational learning (1986), attentional processes determine the extent to which something is observed and what is taken away from the model.

Attentional processes regulate the exploration and perception of modeled activities.

Bandura, Ross, and Ross (1963) stated that the perceived power of a model will affect the extent to which the model is imitated. Furthermore, researchers stated that the perceived similarity of a model to its observers dictates the likelihood of a model being replicated. Slabey and Frey (1975) found that young children pay attention and replicate models that are of the same gender. Slabey and Frey (1975) built on the work of Maccoby, Wilson, and Burton (1958) who found that adults preferred to direct their attention to models of their same gender. Similarly, Maccoby and Wilson (1957) found

that adults learned more of the behaviors displayed by models of their own gender.

Slabey, and Frey (1975) postulated that the subjects in their study did direct attention to the model which had the most perceived power.

Attention processes occur as the factors that attracted a student to join the judging team; attractants could have been the past success of the program, a family or organizational tradition, an interest from the student, or other incentives. Rayfield(2007) profiled gold emblem teams as recruiting students who had proficient speaking abilities, could dedicate time to practices, were committed team players, had good study skills, had positive attitudes, and were competitive. Russell (2007) also found that some teachers recruited students who were good at a competition when they were in 4-H, or who had experience within a certain area, while other teachers participate in CDEs that interest the students.

Retention and Production Process

Retention processes represent the transition of modeled activities into symbolic representation that can be remembered and recalled. Bandura (1986) stated that symbolic representation retention and production are affected by coaching methods, knowledge of content, and the goals set forth by the team and the coach. Bandura (1986) stated, "Repeated performances become routinized and can be enacted smoothly and automatically without representational guidance" (p. 56). Production processes are the third component of modeling. Production processes require participants or observers to replicate a modeled behavior. Production processes govern the organization of learned subskills into new patterns (Bandura, 1986). Retention and production processes are represented as team practices, coaching methodologies, and

different strategies used to help teams acquire the skills needed to evaluate classes successfully.

Rayfield (2007) found that coaches trained their teams by sending them to summer camps, working with college livestock judging teams, attending practice contests and conducting live animal practices. Subsequently, Rayfield (2007) concluded that live animal practices, practice contest, and giving oral reasons were the most important training methods when prepping a livestock evaluation team.

Following Rayfield, Voigt (2012) conducted a mixed methods study evaluating the practices of coaches of dairy, horse, and livestock evaluation CDEs. Voigt (2012) discovered which practices were perceived to be the most beneficial to expert coaches. Voigt found eight central tendencies important to the expert coaches: (1) positive environment, (2) foundational knowledge, (3) support, (4) goals, (5) experience, (6) effective coaching, (7) expectations, and (8) youth development, which was the central tendency encompassing all of the other seven tendencies. Voigt then described the practices as being either coach-focused practices or youth practices. Coach-focused practices included the expectations coaches had for themselves, the coach's dedication to the team, the coach's interest and passion for coaching, positive motivation for coaching, and how the coach taught the basics of judging. Youth practices encompassed the coach assisting the youth in setting personal and team goals, motivational processes, and youth personal development.

Motivational Processes

Motivation is conceptualized in the study as the motivating factors for students to participate in the horse judging and livestock evaluation teams.

Russell (2007) identified several themes that determined how Oklahoma agricultural educators motivated their students to participate in CDEs. These themes were: (1) tradition and success of the chapter, (2) competition opportunities, (3) gaining life skills, (4) enabling students to have fun, (5) recruiting members, and (6) CDEs are a key part of the curriculum. Russell concluded that within the area of tradition and success that students “need to experience success by the teacher and community” (pg.45) for them to continue their involvement in CDEs. Many teachers within Russell’s study stated that there was either a long-standing tradition of winning within that agricultural program, or that students were encouraged through rewards at practices, plaques, pins, banners, and additional competition. Furthermore, the teachers utilized alumni or community members who had experience in areas and events to train teams that were unfamiliar to the teachers.

Russell stated that “students are very competitive, which serves as a driving factor to participate in CDEs” (pg. 48). Many teachers within the study used competition within the class to determine which students will represent the chapter in competitions. One agriculture teacher stated, “Some kids are pushed harder by competition, if it’s not competitive, they are not going to work as hard” (pg.49). Another agriculture teacher stated that the expectations and goals change based on the team, capabilities of the individual student, and the knowledge of the event that the agriculture teacher has. Sometimes the goal was to win the state contest, while other times the goal was to improve scores from competition to competition. Teachers had set a long-term goal, often to win the state contest, but teachers also required the students to set short-term goals for each practice (Russell, 2007).

The agricultural teachers in Russell's (2007) study found that students gained industry knowledge, could communicate better through oral and written form, had better interview skills, were more responsible and dedicated, and had a strong work ethic. Russell (2007) also found that students gained leadership and teamwork skills and were more confident.

Russell (2007) acknowledged that students should have fun when competing in CDEs because they have to devote extra time to participate. The teachers in Russell's study stated that they find ways to help the students have fun through overnight trips or making fun stops to and from the competition.

In a study evaluating the motivating factors for youth participating in Horticulture CDEs, Jones (2011) found that students saw a high value in participating in the horticulture CDE because of career interests and the ability to compete for scholarships. The coaches, however, were intrinsically motivated to have students compete because they wanted their students to learn more about horticulture and enjoyed teaching their students about horticulture. Jones (2011) found that old exams and quizzes, flashcards, and websites were the top resources used by students in preparation for the contest, while videos/DVDs, invitational contests, and judging camps were used the least.

Knowledge Base

Moore (2006) stated, "Before students can evaluate something, they first must speak the language" (p. 16). The first step to teaching evaluation is to provide students with foundational knowledge such as terminology, specific industry standards, and performance measures (Moore, 2006). McCann and McCann stated, "Judging team programs for any animal science commodity represent a unique opportunity to develop student knowledge, communication skills, personal character, and leadership that will

ultimately strengthen the employment skills and marketability of graduates” (McCann & McCann, 1992 p.12). Cavinder, Byrd, Franke, and Holub (2011) stated that “judging team involvement creates an invaluable resource for students to gain critical thinking abilities and develop life skills” (p.62).

Furthermore, the teachers within Russell’s (2007) study used CDEs as a way to teach content. One teacher stated, “What we learn is what we do for competitions” (p. 56). Another stated, “I know some people say you shouldn’t teach CDEs and I say well, they call it career development events and if these students are learning skills for careers, that probably beats teaching them something they will never use” (p. 56). All the teachers saw participation and placement in CDEs as a reflection of them as a teacher. One teacher stated, “I only look good as a teacher if my kids look good first” (p. 57).

In a study ascertaining the use of equine course work used by teams who participated in the 2005 Horse Judging CDE in Virginia, Miller (2006) discovered that of the 32 responding teachers, 56% had some type of equine background. Most of the teachers taught a unit or course in equine management and saw the courses as beneficial to the students.

The participants in Nash and Sant’s (2005) study indicated that judging programs increased their animal industry knowledge. This statement was also supported by the work of McCann and McCann (1992); participants in their study stated “the judging team experience was highly valuable in its exposure to the agriculture industry” (p. 12). Cavinder et al. (2011) concluded that judging team experiences reinforce the content being taught within the classroom and places concepts in an industrial and practical

situation. McCann and Mcann (1992) also stated that evaluation focusing on visual appraisal of livestock and selection for production have been a part of the animal science curriculum for over 75 years.

Evaluation Criterion

Moore (2006) stated that providing students with the evaluation criteria is teaching students what factors to look for when evaluating a class of livestock. Providing the evaluation criteria provides students with the “factors to look for when evaluating each type of class” (Moore, 2006, p. 17).

Wulf-Risner and Stewart (1997) conducted a quasi-experimental study to evaluate which teaching methods, either audio/visual and classroom instruction or live animal instruction, resulted in students performing the best in a horse judging contest. The researchers concluded that classroom instruction was the best method to teaching horse judging content because the components of horse judging were concrete and specific. The structure of the classroom allowed the teacher to focus on specific criteria. The researchers admitted that student motivation and interest could decrease if classroom methods were the only instructional method used.

Rayfield (2007) stated that coaches trained their teams by sending them to summer camps, working with college livestock judging teams, attending practice contests and conducting live animal practices. Subsequently, Rayfield (2007) concluded that live animal practices, practice contest, and giving oral reasons were the most important training methods when prepping a livestock evaluation team.

Criterion Application

Moore (2006) stated that once students learned the evaluation criteria they need to learn how to critically evaluate a set of animals. Evaluation skills are a form of critical thinking and are transferrable to different situations (Moore, 2006).

Bisdorf-Rhoades, Ricketts, Irani, Lundy, and Telg (2005) stated “critical thinking [is] a reasoned, purposive, and introspective approach to solving problems” (p. 25). These researches conducted a study of critical thinking dispositions among undergraduate agricultural communications students. The researchers used the University of Florida Engagement, Maturity Innovativeness assessment that ranked engagement, cognitive maturity, and innovativeness as indicators for critical thinking ability. Participants in the Bisdorf-Rhoades et al. (2005) study ranked high in the areas of innovativeness and engagement. However, participants ranked low in cognitive maturity.

Ozgun-Koca and Altay (2009) found that middle school students’ proportional reasoning skills were dependent upon the instructional methods used by the students’ instructors. The authors found that sixth grade students used a variety of strategies to formulate answers for proportional reasoning questions, while seventh graders only used one method. Furthermore, these researchers found that students did not have the ability to discuss how an answer was reached.

Patterson (2006) evaluated students’ self-confidence in clinical reasoning skills as they participated in the case-based learning (CBL) courses of veterinary school. Patterson (2006) found that as students progressed through the CBL courses their confidence increased in areas related to clinical reasoning: creating a rule-out list, using a problem list, and selecting a diagnostic test. Patterson (2006) concluded the

confidence levels were subject to knowledge areas of the veterinary students. Patterson stated “[the] development of clinical reasoning skills involves both an acquisition of knowledge and ability to apply that knowledge through practice and learning” (pg. 430).

Peteroy-Kelley (2007) discovered that discussion group programs led to students earning higher grades on assessments and higher course grades. Peteroy-Kelley (2007) observed that the discussion group program helped students become more comfortable with course content due to repetition. Furthermore, the students within the study were able to answer questions more logically and sequentially. This led the authors to conclude that the discussion group program was successful at improving students’ conceptual reasoning skills.

In horse and livestock evaluation there are numerous methods agricultural educators can employ for students to learn how to apply evaluation criterion. Students evaluate the strength and weaknesses of an individual animal, and then compare and contrast the differences between animals. Lastly, students learn to evaluate a group of animals into comparable pairs or a unique top and bottom animal with a close middle pair (Moore, 2006).

Communication of Evaluation

Moore (2006) stated that when preparing to communicate their (students’) findings, students repeat “thought process they used to make their placing” (p. 17). This in essence is a reflection (Dewey, 1933) of the class the students evaluated, as well as the criteria used to evaluate the class. Moore (2006) stated “In delivering their reasons, students make claims about each animal and justify their placing” (p. 17).

Furthermore, Boyd, Herring, and Briers (1992) conducted a survey in Texas that examined the life skills 4-H participants thought they had gained through participation in 4-H compared to students who had not participated in 4-H. Researchers found that 4-H members ranked higher in their self-perceived life skills than the participants of the study who were not involved in 4-H. The 4-H members ranked high, especially in areas such as working with groups, understanding self, communicating, and decision making. The investigators found that as 4-H participation increased so did the level of leadership skill development. Amongst the activities that enhanced skill development in 4-H members were leadership roles, method demonstrations and talks, public speaking, and judging events.

Fitzpatrick, Gagne, Jones, Lobley, and Phelps (2005) interviewed Maine 4-H alumni members and adult volunteers to evaluate the skills participants gained through participation in 4-H programs. The authors reported in their findings that alumni and volunteers thought that skills relating to diversity acceptance, communication, team work, and numerous other skills were attained through participation in 4-H. More than 80% of participants had plans to complete college, and 25% planned to obtain graduate or professional degrees.

Nash and Sant (2005) conducted a study of Idaho 4-H judging alumni. Within their study, participants identified animal judging as a critical part of their career success and skill acquisition. Participants stated that participation in judging improved their self-confidence, decision making skills, communication skills, and motivation.

McCann and McCann (1992) conducted a national study to ascertain the benefits of competing on a collegiate judging team. The participants, 1291 in total, represented

members of livestock, horse, meats, and wool judging teams at various universities and junior colleges across the nation and competed on teams between the years of 1932 and 1989. The researchers found that most participants had participated in judging contests through organizations such as 4-H, FFA, or breed organizations. The members perceived substantial benefits from participating on judging teams. Among these benefits were the development of communication skills, confidence, decision-making skills, self-discipline, and self-motivation, and the ability to accept criticism.

Argumentation

Foundational work

Beyer (1931) stated that “probably the most all-inclusive act of critical thinking is that of argumentation—argument making and argument analyzing” (pg. 34). Toulmin (1958) set the precedence of evaluating discourse within the science classroom through the use of TAP. However, several authors have adapted the model for their individual studies. Erduran et al. (2004) recognized the troublesomeness of using the TAP model, as some parts were left ambiguous. However, many studies have utilized TAP for the benefit of instructing argumentation within the classroom. Based on the work of Mean and Voss (1996), Zohar and Nemet (2006) modified Toulmin’s Argument Pattern (TAP) to combine data, warrants, and backings into a single category. Zohar and Nemet (2006) concluded strong arguments consist of multiple justifications that are relevant and specific with accurate scientific data that support the conclusion. Zohar and Nemet’s adaption to the TAP model classified justifications as having “(a) no consideration of scientific knowledge, (b) inaccurate scientific knowledge, (c) non-specific scientific knowledge, (d) or correct scientific knowledge” (p. 49-50). Erduran et al. (2004) operationalized TAP and identifying various levels of argument through their

paper discussing the methodological approaches to evaluating argumentation (Table 2-1).

Table 2-1. Analytical Framework used for assessing the Quality of Argumentation (Erduran et al., 2004)

Level 1:	Level 1 argumentation consists of arguments that are a simple claim versus a counter-claim or a claim versus a claim
Level 2:	Level 2 argumentation has arguments consisting of a claim versus a claim with either data, warrants, or backings but do not contain any rebuttals
Level 3:	Level 3 argumentation has arguments with a series of claims or counter-claims with either data, warrants, or backings with the occasional weak rebuttal
Level 4:	Level 4 argumentation shows arguments with a claim with a clearly identifiable rebuttal. Such an argument may have several claims and counter-claims.
Level 5:	Level 5 argumentation displays an extended argument with more than one rebuttal

Contemporary literature

Nussbaum (2002) recognized the potential for students to develop argumentation within the social studies classroom as a way to understand historical events and current social issues and to increase participation in a democratic society. Nussbaum stated that students encounter difficulty stating both premises within an argument because they confuse the demands of formal and informal argumentation. Informal argumentation occurs in small groups where the premises often do not need to be stated. Formal argumentation however requires full explanation of an argument as an audience cannot ask for clarification.

Nussbaum (2002) created a scaffolding worksheet to help students formulate arguments. Nussbaum's worksheet included claims, grounds, and warrants. The goal of the scaffold was to help student formulate their warrants but used common terms such as opinions and evidence. The worksheet also asked students how their evidence related to the opinion. Nussbaum used a class of sixth grade social studies students in

California who had spent the year learning about cities and participating in a city government simulation to test the worksheet and the use of scaffolding on students' argumentation skills. The students used the worksheets to work through different topics of discussion each week in class, and Nussbaum analyzed the worksheets six different times. Nussbaum concluded that argumentation scaffolds can be used in a variety of content areas for students of all ages and cognitive levels.

In a study of ninth grade students, Zohar and Nemet (2002) sought to improve students understanding of genetics and improve students' argumentation skills through a series of dilemmas in human genetics. The study concluded that teaching genetics through the use of dilemmas with an argumentation unit increased students' knowledge, use and transferability of genetic information as well as improved students' argumentation abilities. Zohar and Nemet's experiment groups' argumentation abilities and content knowledge scores increased more than the control group, whose argumentation scores did not change.

Von Aufschnaiter, Erduran, Osbourne, and Simon (2007) evaluated students' abilities to learn scientific information and argumentation skills after a series of nine argumentation lessons over the course of a year with the initial and final lesson based within a socioscientific issue. Von Aufschnaiter et al. (2007) found that students can create high quality arguments without specifically being taught argumentation to a great extent. Furthermore, von Aufschnaiter et al. (2007) concluded that students' argumentation is higher when they have more knowledge regarding the specific topic. Von Aufschnaiter et al. (2007) stated "any attempt to develop students' knowledge through argumentation much be related to the students' prior knowledge" (pg. 127).

Venville and Dawson (2010) found that instruction based on argumentation increased students' argumentation abilities and the students' higher level arguments that contained rebuttals and counterclaims increased substantially, while the argumentation abilities of the comparison group remained the same.

Agriculturally related studies

Thoron (2010) discovered that inquiry-based instruction increased students' ability to link evidence to claims and increased students' ability in scientific reasoning. In his study, Thoron used inquiry-based instruction as a way to improve student learning in the agricultural science classroom over a 12-week time period. Thoron explained that the duration of time within the study could also lead to gains to argumentation.

Burleson (2013) later used training modules to increase content knowledge and argumentation skills in students who participated in an agricultural sales FFA career development event. She concluded that argumentation skills did not have to be used during instruction in order for the students to exhibit argumentation skills in the contest. This finding was contradictory to the findings of Thoron (2010) and Zohar and Nemet (2002). Burleson (2013) explained that it is not necessary to directly teach argumentation skills, and participation through the agricultural sales career development offers a chance for students to learn argumentation in an applied setting.

Chapter Summary

Chapter 2 presented the theoretical framework and conceptual model used in this study. Observational Learning Theory states that observers learn new skills by observing models, practicing, and then reproducing the newly learned skills. The conceptual model combined Observational Learning Theory, Toulmin's Argumentation Pattern, Moore's Four steps to teaching evaluation. The Conceptual model stated that

observational learning is a fundamental piece to the instruction of evaluation and argumentation and is present within every step of Moore's four steps to teaching evaluation. The model also states that students' or observers' argumentation skills increase as they progress through the four steps of evaluation.

Chapter 2 also presented previous research about the identified variables within the study: skill acquisition through animal science project and judging teams, coaching and training methods, equine and content curriculum, reasoning, and argumentation. These studies, in a brief summary, found that students attain valuable life skills by competing in animal science based project and contest. Studies also found coaches and coaching methodology have a large effect on recruitment, student motivation, and success. Finally, argumentation skills can be built through the use of scaffolds and guides.

All variables were identified by the researcher as influencing student success within the horse judging CDE, but the independent variable of interest is students' argumentation abilities. Chapter 3 will present the methods used to conduct this study and measure the argumentation scores of students.

CHAPTER 3 RESEARCH METHODS

Chapter 1 presented that student achievement and acquisition of transferrable skills are lacking within the American public school system (Casner-Lotto & Barrington, 2007). Yet the Association for Career and Technical Education (2012) stated that career and technical education provided students with opportunities to obtain transferrable skills while aligning with their interest with viable careers. Chapter 1 also presented the problem statement and research objectives that were investigated during this study.

Chapter 2 presented the literature related to the current study. Many researchers have identified life skill acquisition as an important part of 4-H and FFA animal science based projects and competitions. Researchers (Rayfield, 2006; Voigt, 201) have also discovered the best recruiting and training practices for livestock, horse, and diary evaluation teams on the national level.

The goal of this research was to ascertain the level of argumentation skills found among participants within the Florida State FFA and 4-H Horse Judging CDE/Contest in 2013. Chapter 3 will present an in-depth discussion of the methods used to address the objectives of this study. This chapter discusses the research design, population and sample, instruments used, data collection process, and the data analysis techniques.

Research Design

This study was a descriptive correlational study which sought to assess the argumentation levels of students who participated in the Florida State Horse Judging Contest. Correlational research seeks to evaluate relationships and patterns between variables within a single group (Ary, Jacobs, & Sorensen, 2010). Correlation, denoted by r , assumes that the relationships between variables model a straight line; r is

proportional to the slope of a line and indicates the strength of a relationship between the two variables (Agresti & Finlay, 2009). Davis (1971) stated correlations between .01 and .09 are considered negligible, .10 to .29 are low, .30 to .49 are moderate, .50 to .69 as substantial, .70 to .99 as very high, and 1.00 is perfect. Davis (1971) defined the standard to which the correlations are discussed in this study.

The study was designed to follow the predetermined organization of the 2013 Florida horse judging program that was facilitated by the University of Florida's Animal Science department. Participants had the opportunity to participate in two workshops facilitated by the University of Florida's Animal Science Department. The first workshop was purposed to instruct participants on how to evaluate different halter and performance classes. This first workshop took place in December of 2012 before the qualifying contest. The second workshop instructed participants on how to formulate a set of oral reasons and was conducted in March of 2013. Participants had to advance to the state contest by placing at a qualifying contest. The qualifying contest required participants to evaluate different classes of horses, take a knowledge assessment test, and answer questions pertaining to the classes the participants evaluated.

The state contest consisted of the participants evaluating eight placing classes—four halter classes and four performance classes. The participants were assigned to four separate groups for the duration of the contest. Each class consisted of four animals to be placed numerically from first (one) to last (four) based on the industry standards for the respective classes. The participants evaluated a class of performance halter geldings (class one), hunter in hand (class two), performance halter mares (class three), and Arabian sport horse (class four). The performance classes consisted of

western pleasure (class five), hunt seat equitation (class six), hunter under saddle (class seven), and reining (class eight). Reasons were given on two halter and two performance classes. The reasons were given after all the classes had been evaluated and judging cards were turned in. Participants were allotted an average of thirty minutes to formulate their reasons before presenting them to a judge. The participants presented a two-minute set of oral reasons to a judge who scored them from zero to fifty. The participants presented reasons on performance halter geldings, performance halter mares, hunter under saddle, and reining. One judge was assigned to evaluate the reasons for a given class.

Population

The population of this study was all participants who competed in the 2013 Florida FFA and 4-H State Horse Judging CDE/Contest in the state of Florida ($N = 65$). However, since oral reasons were only given at the state contest which qualifies students in both 4-H and FFA to compete at their respective national contest, the results were limited only to the sample.

The population ($N = 65$) consisted of all the teams who competed at the state contest in 2013. Each team member judged eight classes of horses (four halter classes and four performance classes), and then presented four sets of reasons (two halter classes and two performance classes). The classes used for oral reasons were Performance Halter Geldings, Performance Halter Mares, Hunter Under Saddle, and Reining.

Instrumentation

With this study seeking to describe the argumentation level of students, the researcher developed two questionnaires to obtain demographic data on the students and gather information on teachers' training methods.

The researcher developed different questionnaires for students (see Appendix A) and coaches (Appendix B). The questionnaires were found to be acceptable for face and content validity by a panel of experts within the Agricultural Education and Communication department of the University of Florida. The questionnaires were distributed to the coaches via email three weeks prior to the CDE/Contest. Each packet contained: student questionnaire (Appendix A), coach questionnaire (see Appendix B), Internal Review Board consent forms for the parents (Appendix C) and students (see Appendix D), and cover letter (Appendix E).

The coach questionnaire (Appendix B) was used to ascertain the methods coaches used to train teams and select team members. The coach questionnaire included four questions about basic demographic data of the team. Questions five through seven determined the amount of time the team practiced and how many practices the teams had in preparation for the contest. Questions eight and nine ascertained how often the teams utilized live animals, pictures, video, and other media to evaluate horses in practice. Questions ten and eleven gathered information on whether the team attended the judging clinics hosted by the University of Florida's Animal Science Department. Lastly, question twelve was a free response question that asked the coaches how they chose the participants who were on their judging team.

The participant questionnaire (see Appendix A) gathered information related specifically to the student. Questions one through four included basic demographic

information and determined the organizational affiliation of the participants. Questions five through nine ascertained the previous experience of the participant in horse judging, horse related events, judging related events, and speaking events. These questions were asked because the researcher anticipated a relationship between prior experience in the evaluation events, speaking events, and events related to horse content to the scores within the study. Questions ten through thirteen addressed participants' self-efficacy in terms of each judging class.

The participants' oral reasons were evaluated by the event judges and those scores were used within this study. The researcher utilized an argumentation rubric created by Schen (2007) (Appendix E) and used by Thoron (2010) and Burleson (2013) to score the participants' oral reasons as arguments. The top, middle, and bottom pair of reasons were scored separately and then totaled for the total argumentation of the reasons set. Argumentation scores in this study could range from 0 to 20. The researcher developed a separate score card (see Appendix F) to help maintain clarity while evaluating the argumentation score of the oral reasons. This score card allowed the researcher to record participant numbers, class name, the competition reasons score, organizational affiliation, and participant's placing of the class, the scores given on each pairing and the total argumentation score. Each reasons set was then correlated to the class placing score and reasons score. Interrater reliability was assessed by a panel of experts at the University of Florida Agricultural Education and Communication Department and Animal Science Department and established at .91. Ary, Jacobs, and Sorensen (2012) stated that interrater reliability should be "positive and high quite high (pg. 256)."

Data Collection

On the day of the contest coaches returned the questionnaires and IRB consent forms. The contest was conducted according to the rules of Florida 4-H and the Florida FFA Association. The oral reasons were recorded using audio voice recorders. The researcher collected the scores from the contest coordinator and the audio recordings. The researcher evaluated all the recorded reasons over a series of six weeks. The recorded oral reasons were analyzed using the argumentation rubric and correlated with the contest scores.

Data Analysis

The purpose of this study was to determine the extent to which students used argumentation skills when participating in the horse evaluation CDE and contest. The three objectives were to:

1. Determine the argumentation skills used by participants in a horse evaluation CDE and contest.
2. Examine the relationship between argumentation skill scores in the horse evaluation CDE and contest including: reasons scores, placing of classes, and overall scores.
3. Describe the argumentation levels of participants in the horse evaluation contest.

In order to address the objectives of this study, data were analyzed using the SPSS® version 20.0 for Windows™. Analysis of objective one was assessed through descriptive statistics, including mean, medians, modes, and standard deviations, to describe the participants' argumentation scores. Correlations were used to assess objective two and objective three.

Chapter Summary

Chapter 3 described the research methods used to conduct this study. As the study was meant to evaluate the argumentation levels of the students as they

participate in the horse judging program, a descriptive correlational study was utilized. In order to answer the research questions, several steps were implemented.

This study compared the scores of the participants in the horse judging CDE and contest to a researcher evaluated argumentation score. These scores were correlated in search for any relationships, and descriptive statistics were used to describe the argumentation scores of the participants.

Instruments were assessed for face and content validity by a panel of experts at the University of Florida Agricultural Education and Communication Department and Animal Science Department. Chapter 4 will discuss in detail the results of the study.

CHAPTER 4 RESULTS

Chapter 1 presented that student achievement and acquisition of transferrable skills are lacking within the American public school system (Casner-Lotto & Barrington, 2007). Yet, the Association for Career and Technical Education (2012) stated that career and technical education provided students with opportunities to obtain transferrable skills while aligning with their interest with viable careers. Chapter 1 also presented the problem statement and research objectives that were investigated during this study.

Chapter 2 presented the literature related to the current study. As presented in chapter two, many researchers have identified life skill acquisition as an important part of 4-H and FFA animal science based projects and competitions. Researchers (Rayfield, 2006; Voigt, 201) have also discovered the best recruiting and training practices for livestock, horse, and diary evaluation teams on the national level.

The goal of this research was to ascertain the level of argumentation skills found amongst participants within the Florida State FFA and 4-H Horse Judging CDE/Contest in 2013. Chapter 3 discussed the research design, population and sample, instruments used, data collection process, and the data analysis techniques. Chapter 4 will present the results of this study.

Findings

The purpose of this study was to determine the extent to which students used argumentation skills when participating in the horse evaluation CDE and contest. The three objectives were to:

1. Determine the argumentation skills used by participants in a horse evaluation CDE and contest.

2. Examine the relationship between argumentation skill scores in the horse evaluation CDE and contest including: reasons scores, placing of classes, and overall scores.
3. Describe the argumentation levels of participants in the horse evaluation contest.

Demographics of participants

Participants completed a questionnaire designed to collect the basic demographic information. There was a total of 65 participants ($N = 65$) at the Florida State Horse Judging contest. There were a total of 43 ($n = 43$) respondents to the team member questionnaires, making for a response rate of 69%. The demographic information and participants' perceptions of the contest were collected by a questionnaire. Participant ethnicity was categorized into the groups of Caucasian, African American/Black, Hispanic/Latino, Asian/Pacific Islander, and other. Nearly all of the participants were categorized as Caucasian ($n = 41$) (Table 4-1).

Table 4-1. Participant Ethnicity ($n = 43$)

Ethnicity	<i>n</i>	%
Caucasian	41	95.3
Hispanic	1	2.3
Other	1	2.3

Participants were also asked to report on their gender. Most participants were female (95.3%) (Table 4-2).

Table 4-2. Participant Gender ($n = 43$)

Gender	<i>n</i>	%
Male	2	4.7
Female	41	95.3

The age of the participants was also recorded. Participants' age ranged from 15 years of age to 18 years of age, with the majority of participants being either 16 years of age (41.9%) or 17 years of age (34.9%) (Table 4-3).

Table 4-3. Participant Age ($n = 43$)

Participant Age	n	%
15	4	9.3
16	18	41.9
17	15	34.9
18	6	14.0

Prior Experience

Participants reported whether they were a member of FFA, 4-H, or both associations. Twenty-eight participants were FFA members, eight were 4-H, and seven said they were members of both associations (Table 4-4).

Table 4-4. Club Affiliation ($n = 43$)

Club	n	%
4-H	8	18.6
FFA	28	65.1
Both	7	16.3

Participants also reported if they had any other experiences with horses, speaking events, or evaluation events. Most participants ($n = 29$) had participated in other horse related events. Only 12 participants had competed at the state contest previously. Fifteen participants had competed in speaking events. Twenty-two participants had been judging horses for longer than a year and 21 participants had judged in other judging events (Table 4-5).

Table 4-5. Prior experiences of participants ($n = 42$)

Prior Experience	Yes	%	No	%
Participated in other Horse related events	29	69	13	31
Competed at the state contest previously	12	28.6	30	71.4
Participated in Speaking events	15	35.7	27	64.3
Participated in Other Judging events	21	50	21	50

Over half (64.2%) of the participants had participated in horse judging for one year or more and 35.7% ($n = 15$) had been participating in horse judging for less than one year (Table 4-6).

Table 4-6. Years of experience of horse judging participants ($n = 42$)

Years	<i>n</i>	%
Less than 1 year	15	35.7
1 year	5	11.9
2 years	8	19.0
3 years	7	16.7
4 years	4	9.5
More than 4 years	3	7.1

Nearly half (45.2%) of the participants had not participated in any other evaluation based contest, and 47.6% of the participants had participated in other evaluation based contests for more than one year (Table 4-7).

Table 4-7. Years of experience in other evaluation events ($n = 42$).

Years	<i>n</i>	%
No prior participation in other events	19	45.2
Less than 1 year	3	7.1
1 year	4	9.5
2 years	4	9.5
3 years	7	16.7
4 years	3	7.1
More than 4 years	2	4.8

Perceptions

The last part of the participant questionnaire gathered information regarding participants' perceptions towards different classes within the horse evaluation contest.

Participants reported their perceived weakest event, best event, most enjoyed event, and least enjoyed event. The researcher classified each event as halter class, performance class, reasons, or other. Twenty-two participants perceived that they were best at evaluating halter classes, and 19 participants stated they enjoyed evaluating halter classes. Ten participants perceived that they were best at evaluating performance classes, and 19 participants enjoyed evaluating performance classes. Seven participants stated they least enjoyed presenting oral reasons, and nine participants identified presenting oral reasons as their weakest event (Table 4-8).

Table 4-8. Perceptions of Horse Judging Participants ($n = 42$)

	Halter Classes		Performance Classes		Reasons		Other	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Best Event	22	52.4	10	23.8	0	0	10	23.8
Weakest Event	5	11.9	20	47.6	9	21.4	8	19
Most Enjoyed Event	19	45.2	19	45.2	0	0	4	6.2
Least Enjoyed Event	3	7.3	22	53.7	7	17.1	9	13.8

Coach's Questionnaire

The coaches or advisors for each horse judging team were asked to fill out a questionnaire regarding the demographics of their team and their coaching practices. There were 17 teams present with 13 teams completing the questionnaire, making for a response rate of 76%. The coaches reported that the number of participants on their team ranged from three to seven, and the average was 4.15. The average practice lasted 1.46 hours. Teams averaged 13.15 practices in preparation of the state qualifier

contest. Teams averaged 3.85 live animal practices and 18.23 practices that utilized media such as video or pictures (Table 4-9).

Table 4-9. Coach's Questionnaire ($n = 13$)

	Minimum	Maximum	Mean	Std. Dev.
Number of students on the team	3	7	4.15	.99
Number of males on the team	0	3	.38	.87
Numbers of females on the team	3	5	3.77	.6
Students who had been to state previously	0	3	1.25	1.29
Number of practices in preparation for qualifier contest	3	24	13.15	6.34
Number of practices in preparation for state contest	5	60	15	14.47
Number of live animal practices	1	15	3.85	4.16
Number of media practices	8	60	18.23	13.27

Objective 1: Determine the argumentation skills used by participants in a horse evaluation CDE and contest.

Objective one sought to ascertain the argumentation scores participants obtained when presenting their oral reasons. The rubric developed by Schen (2007) was adapted to accommodate the structure of oral reasons. During an oral reasons set, participants would present three claims, three grounds and warrants, three counterarguments and one rebuttal. Argumentation was scored on a scale of zero to 20. Descriptive statistics were analyzed using SPSS version 20. A score of zero represented the minimum score and 20 was the maximum score. The mean for the argumentation score of oral reasons set one, performance halter geldings, referred to as A1, was 12.42 with a standard deviation of 3.18. The minimum score was 3 and the maximum score was 20. The

mean for the argumentation score of oral reasons for oral reasons set 2, performance halter mares, referred to as A2, was 12.63 with a standard deviation of 3.19, a minimum score of 5 and a maximum score of 20. The mean argumentation score for oral reasons set three, hunter under saddle, referred to as A3, was 11.48 with a standard deviation of 2.9, a minimum score of 6 and a maximum score of 20. The mean argumentation score for oral reasons set four, reining, referred to as A4, was 11.25 with a standard deviation of 3.26, a minimum of 3 and a maximum score of 20 (Table 4-10).

Table 4-10. Argumentation Means of Participants (*N* = 65)

	A1	A2	A3	A4
Mean	12.42	12.63	11.48	11.25
Std. Deviation	3.18	3.19	2.9	3.26
Minimum	3	5	6	3
Maximum	20	20	20	20

Note: A1 = Argumentation score for Performance Halter Geldings, A2 = Argumentation score for Performance Halter Mares, A3 = Argumentation score for Hunter Under Saddle, A4 = Argumentation score for Reining

Objective 2: Examine the relationship between argumentation scores and participants' scores in the horse evaluation CDE and contest including: reasons scores, placing of classes, and overall scores.

Objective two sought to identify the relationships that existed amongst argumentation scores of participants in the horse evaluation CDE, participants' placing scores, reasons scores, and overall scores. To address this objective, participants' scores were collect from contest officials and correlations were investigated using SPSS version 20. The placing scores and reasons scores for Performance Halter Geldings, Performance Halter Mares, Hunter Under Saddle, and Reining were correlated with the

participants' argumentation scores. The following sections will discuss the relationships.

The range of scores is presented in Table 4-11.

Table 4-11. Participant Scores in Florida FFA and 4-H Horse Evaluation Contest
(*N* = 65)

Placing Scores	Range	Mean	SD
Performance Halter Geldings	17 – 50	45.58	6.34
Hunter in Hand	30 – 50	40.89	5.60
Performance Halter Mares	25 – 50	42.28	6.88
Arabian Sport Horse	39 – 50	46.43	2.95
Western Pleasure	25 – 50	43.12	5.89
Hunter Seat Equitation	0 – 50	44.72	8.47
Hunter Under Saddle	25 – 50	40.58	7.49
Reining	29 – 50	41.31	5.70
Reasons Scores			
Performance Halter Geldings	24 – 48	39.11	5.72
Performance Halter Mares	25 – 43	34.2	3.6
Hunter Under Saddle	20 – 50	31.88	5.87
Reining	30 – 47	38.66	4.52
Overall Scores	420 – 549	489.06	33.20

Note: Overall Scores = the sum of all the placing scores and reasons scores

Argumentation Score Relationships

Argumentation scores were assessed using the Schen (2007) rubric to evaluate participants' oral reasons. The participants within this study presented oral reasons on Performance Halter Geldings, Performance Halter Mares, Hunter Under Saddle, and Reining. Correlations were calculated using SPSS version 20, and the nomenclature suggested by Davis (1971) was used to describe the relationships. Davis (1971) identified correlations ranging from .01 to .09 as negligible, .10 to .29 as low, .30 to .49 as moderate, .50 to .69 as substantial, .70 to .99 were identified as very high, and 1.00 is identified as perfect.

The argumentation score and placing score for performance halter geldings had a negative negligible relationship at $r = -.03$. The argumentation score and placing score

for performance halter mares had a low relationship at $r = .25$. The argumentation score and placing score for hunter under saddle had a negligible relationship at $r = .08$. The argumentation score and placing score for reining had a negligible relationship at $r = .10$. In general, the argumentation score had negligible to low relationships with the placing scores in the contest.

The argumentation score and reasons score for performance halter geldings had a low relationship at $r = .16$. The argumentation score and reasons score for performance halter mares had a moderate relationship at $r = .33$. Also, the argumentation score and reasons score for hunter under saddle had a moderate relationship at $r = .32$. Lastly, the argumentation score and reasons score for reining had a substantial relationship at $r = .51$. The argumentation scores had low to moderate relationships with the reasons scores, except for with the reasons score for reining.

Reasons Score Relationships

Reasons were assessed by judges at the 2013 Florida FFA and 4-H Horse Evaluation Contest. Scores could have ranged from zero to 50. The previous section reported the relationships between argumentation and placing scores, then reported the relationships between argumentation and reasons scores. This section will report the relationships between reasons scores and placing scores.

The reasons score and placing score for performance halter geldings had a low relationship at $r = .29$. Secondly, the reasons score and placing score for performance halter mares had a moderate relationship at $r = .31$. The reasons score and placing score for hunter under saddle had a low relationship at $r = .16$. Lastly a low relationship existed between the reasons score and placing score for reining at $r = .21$. Reasons scores had low to moderate relationships with the placing scores.

Total Scores

Total scores were calculated as the summation of each type of score. The argumentation total was the summation of each argumentation score. Congruently, the placing total was summation of the placing scores; the reasons total was the summation of the reasons scores. The overall total was the summation of the placing scores and reasons scores.

The total argumentation score had a substantial relationship with the reasons total at $r = .59$. The total argumentation also had a moderate relationship with the overall total score at $r = .32$. Furthermore, the total argumentation score had a moderate relationship with the placing total score at $r = .46$. The total reasons score had a moderate relationship with the total placings score at $r = .40$. The total reasons score, also, had a very high relationship with the overall total score at $r = .77$ (Table 4-12).

Table 4-12. Argumentation Correlational Tables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1.H1	--	-.04	.23	.27	.38	-.03	.19	-.09	.29	.40	.28	.19	.35	.49	.52	-.03	.12	.16	.02	.08
2.H2		--	.25	.13	-.18	.22	.15	-.13	-.14	-.04	-.03	-.36	-.17	.38	.18	-.05	-.03	-.24	-.12	-.12
3.H3			--	.12	.12	.16	.36	-.01	.31	.31	.31	.16	.34	.65	.62	.14	.25	.32	.07	.22
4.H4				--	.24	-.08	.01	.07	.13	.10	.12	-.02	.10	.32	.28	.12	.07	-.04	-.02	.04
5.P1					--	.17	.10	.05	.47	.29	.32	.28	.43	.50	.57	.04	.10	.04	-.17	-.00
6.P2						--	-.08	.24	.15	.03	.06	.21	.14	.54	.44	-.02	.20	.13	-.01	.08
7.P3							--	-.25	.12	.26	.16	-.05	.15	.46	.39	.07	.03	.08	-.19	-.00
8.P4								-	.16	-.06	-.08	.21	.07	.22	.19	.05	.18	.14	.10	.13
9.R1									--	.67	.50	.54	.83	.41	.70	.16	.36	.39	.10	.29
10.R2										--	.57	.57	.83	.36	.66	.26	.33	.36	.28	.35
11.R3											--	.50	.82	.31	.63	.25	.31	.32	.22	.32
12.R4												--	.78	.20	.52	.42	.54	.58	.51	.59
13.R-Total													--	.40	.77	.33	.46	.50	.32	.46
14.P-Total														--	.89	.07	.27	.20	-.09	.12
15.Total															--	.21	.42	.38	.10	.32
16.A1																--	.75	.59	.67	.87
17.A2																	--	.76	.64	.91
18.A3																		--	.63	.85
19.A4																			--	.85
20.A-Total																				--

Note: H = Scores in halter classes; P = Scores in Performance Classes; R = Scores on oral reasons; R-Total = Oral Reasons score total P-Total = Placement scores total; A= Argumentation scores

Correlation to Coaching Methods

Correlations were analyzed between the answers to the coach questionnaire and team scores in placing, reasons, and argumentation. Hours per practice recorded low negative relationships with number of practices held in preparation for the state contest ($r = -.11$), the number of media practices used by the teams ($r = -.18$), and the team argumentation score ($r = -.26$). The number of practices held in preparation for the state qualifying contest reported a low relationship with the number of live practices conducted at $r = .22$. The number of state practices reported low relationships with the team reasons score, and the team argumentation score at $r = .11$ and $r = .21$, respectively. The number of live animal practices reported low relationships with the number of media practices, and the team reasons score at $r = .24$ and $r = .16$, respectively. The number of media practices reported a low relationship the team placing score, and the team argumentation score at $r = .12$ and $r = .17$, respectively.

The hours per practice had a moderate negative relationship with team placing score at $r = -.46$. The number of practices in preparation for the qualifier contest reported moderate relationships ranging from $r = .33$ to $r = .42$ with number of practices in preparation for the state contest, the team placing score, and the team argumentation score. The number of live animal practices reported moderate relationships with the team placing score and the team argumentation score at $r = .39$ and $r = .42$, respectively. The team placing score reported moderate relationships with the team reasons score and the team argumentation score at $r = .33$ and $r = .42$, respectively. The number of practices for the qualifier contest reported substantial relationships with the number of media practices and the team reasons score at $r = .52$ and $r = .58$, respectively. The team reasons score reported a substantial relationship with the team

argumentation score at $r = .53$. The number of practices in preparation for the state contest had a very high relationship with the number of media practices at $r = .91$ (Table 4-13).

Table 4-13. Coach's questionnaire correlations

	1	2	3	4	5	6	7	8
1. Hours of Practice	--	.09	-.11	.02	-.18	-.46	.01	-.26
2. Number of qualifier practices		--	.38	.22	.52	.42	.58	.33
3. Number of state practices			--	-.07	.91	-.04	-.11	.21
4. Number of live practices				--	-.24	.39	.16	.42
5. Number of media practices					--	.12	.05	.17
6. Team placing score						--	.33	.42
7. Team reasons score							--	.53
8. Team argumentation score								--

Correlations to Participants' Perceptions

Participants completed a questionnaire which recorded the participants' demographic information, previous experiences in evaluation based events, and the participants' perceptions of their abilities in horse evaluation. This section presents the relationships between the participants' perceptions and performance in the horse evaluation contest. The halter placing score reported low relationships with the total reasons score, the total argumentation score, and the participants' perceived weakest event at $r = .29$, $r = .11$, and $r = .1$, respectively. The performance placing score reported low relationships with the total argumentation score ($r = .10$), and the participants' perceived least enjoyed event ($r = .27$). Additionally, the performance placing score reported low negative relationships with the participants' perceived best events and the participants' perceived most enjoyed event at $r = -.18$ and $r = -.20$, respectively. The

total argumentation score reported a low relationship with the participants' perceived most enjoyed event at $r = -.14$. The participants' perceived best event reported low relationships with the participants' most enjoyed events, and the participants' perceived weakest event at $r = .26$ and $r = -.11$, respectively. The participants' most enjoyed event reported a low relationship with the participants' perceived weakest event at $r = -.14$.

The total halter score reported moderate relationships with the total performance score, and the participants' perceived best event at $r = .31$ and $r = .37$, respectively. The total reasons score reported moderate relationships with the total performance, the total argumentation score, and the participants' perceived best event. The participants' least enjoyed events reported a substantial relationship with the participants' perceived weakest event at $r = .58$. The rest of the relationships were reported as negligible (Table 4-14).

Table 4-14. Participants' perceptions correlations

	1	2	3	4	5	6	7	8
1.Halter Total	--	.29	.31	.11	-.37	.07	.09	.1
2.Reasons Total		--	.35	.46	-.31	.08	-.03	-.01
3.Performance Total			--	.10	-.18	-.2	.26	.05
4.Argumentation Total				--	-.05	-.14	.05	.08
5.Perceived Best Event					--	.26	-.04	-.11
6.Perceived most enjoyed event						--	-.09	-.14
7.Perceived least enjoyed event							--	.58
8.Perceived weakest event								--

Objective 3: Describe the argumentation levels of participants in the horse evaluation contest.

The oral reasons of the participants were evaluated using an argumentation rubric formulated by Schen (2007). Schen's (2007) rubric categorized the different constructs of argumentation into scores of 0, 1, and 2. The participants' scores were coded as categorical data and frequencies were calculated using SPSS version 20. The oral reasons were evaluated using the terminology of Toulmin (1958) claims, grounds, warrants, counterarguments, and rebuttals. Due to ambiguity that was similar to the work of Venville and Dawson (2010), grounds and warrants were combined into one construct. Claims, grounds and warrants, and counterarguments were evaluated three times in each oral reasons set, but rebuttals were only evaluated once per reasons set.

Claims

A claim is a conclusion statement that voices the opinion or decision. Claims within this study identified the way a participant ordered two individuals in a class. Claims could obtain score of zero, one, or two. A zero score represents a claim that was not made or was irrelevant to the class. A score of one represents a claim that was weakly made or does not present the criteria used within an evaluation, while a claim that scored a two presents the criteria used for evaluation. Figure 4-1 presents an example of scores for the claim construct within argumentation.

Claim Score	Example Claim statements
Claim Score 0	No claim was presented.
Claim Score 1	I placed horse 1 over horse 2. Horse 3 was a better performer than horse 2.
Claim Score 2	I placed horse 1 over horse 2 finding horse 1 to be more balanced I placed horse 2 over horse 4 finding horse 2 to be higher quality mover.

Figure 4-1. Examples of scores for claims

Participants primarily scored a one on the claims portion of all the oral reasons. Within reasons set one, 64.6% to 93.8% scored a one on each of the claims within the set. Two participants scored zero, meaning the participants did not state a claim, and 32.3% of participants scored a two. A similar pattern was recorded in reasons set two as 61.5% to 87.7% of participants scored a one on the claims. Two participants did not offer a claim, and 7.7% to 35.4% scored a two on the claims.

Within reasons set three, 72.3% to 90.8% of participants scored a one on their claims. Only two participants scored a 0 on either claim. 6.2% to 26.2% of participants scored a 2 on the claims within the reasons set. Participants who scored a one on reasons set four ranged from 73.8% to 89.2%. Up to four participants did not state a claim, while participants who scored a two ranged from 4.6% to 24.6% (Table 4-15).

Table 4-15. Claim scores for Participants in the 2013 Florida FFA and 4-H Horse Evaluation CDE and Contest (N = 65)

	0		1		2	
	n	%	n	%	n	%
Argumentation for Performance Halter Geldings						
Claim 1	2	3.1	42	64.6	21	32.3
Claim 2	2	3.1	55	84.6	8	12.3
Claim 3	2	3.1	61	93.8	2	3.1
Argumentation for Performance Halter Mares						
Claim 1	2	3.1	40	61.5	23	35.4
Claim 2	2	3.1	54	83.1	9	13.8
Claim 3	3	4.6	57	87.7	5	7.7
Argumentation for Hunter Under Saddle						
Claim 1	1	1.5	47	72.3	17	26.2
Claim 2	2	3.1	58	89.2	5	7.7
Claim 3	2	3.1	59	90.8	4	6.2
Argumentation for Reining						
Claim 1	1	1.5	48	73.8	16	24.6
Claim 2	4	6.2	56	86.2	5	7.7
Claim 3	4	6.2	58	89.2	3	4.6

Grounds and warrants

Grounds and warrants are the justifications and data used to support a claim. Similarly to a claim, grounds and warrants are scored on a scale of zero to two. Zero constitutes that no grounds and warrants were offered, or they were not related to the claim. A score of one represents grounds and warrants that were weakly support the made or are too general. A score of two represents grounds and warrants that sufficiently support the claim made and identify specific data. Figure 4-2 presents an example of scores for the ground and warrant construct within argumentation.

Scores	Ground and Warrant statements
Score 0	No ground or warrant was presented.
Score 1	Horse 1 was more balanced. Horse 1 was more muscular
Score 2	Horse 1 was more balanced easily dividing into thirds. Had a shorter back complimented by a longer underline. Horse 1 was more muscular having more bulging muscle in the rump and chest. Furthermore, offering greater delineation in muscle through the forearms, shoulders, and hips.

Figure 4-2. Ground and warrant examples and scores

Participants primarily scored a two on the grants and warrants section of oral reasons. Within reasons set one 66.2% to 89.2% of participants scored a two on grants and warrants. 10.8% to 32.3% of students presented weak grounds and warrants that scored a one. Reason set reported that 61.5% to 92.3% of participants scored a two on grounds and warrants. Between 7.7% and 35.4% of participants offered weak grounds and warrants. Up to two participants did not offer grounds and warrants throughout their reasons set.

In reasons set three participants primarily scored a two (47.7% to 83.1%). 16% to 47.7% of participants offered grounds and warrants which scored a one. Only three

participants did not offer any grounds or warrants. Within reasons set four between 40% and 80% of participants scored a two on grounds and warrants. Between 20% and 55.4% of participants scored a one on ground and warrants, while three participants scored a zero (Table 4-16).

Table 4-16. Grounds and Warrant scores for Participants in the 2013 Florida FFA and 4-H Horse Evaluation CDE and Contest (N = 65)

	0		1		2	
	n	%	n	%	n	%
Argumentation for Performance Halter Geldings						
GW 1	0	0	7	10.8	58	89.2
GW 2	0	0	16	24.6	49	75.4
GW 3	1	1.5	21	32.3	43	66.2
Argumentation for Performance Halter Mares						
GW 1	0	0	5	7.7	60	92.3
GW 2	1	1.5	16	24.6	48	73.8
GW 3	2	3.1	23	35.4	40	61.5
Argumentation for Hunter Under Saddle						
GW 1	0	0	11	16.9	54	83.1
GW 2	1	1.5	22	33.8	42	64.6
GW 3	3	4.6	31	47.7	31	47.7
Argumentation for Reining						
GW 1	0	0	13	20.0	52	80.0
GW 2	3	4.6	24	36.9	38	58.5
GW 3	3	4.6	36	55.4	26	40.0

Note: GW 1 = Grounds and warrants 1; GW 2 = Grounds and warrants 2; GW 3 = Grounds and warrants 3

Counterargument

Counterarguments are the verbalization that an alternate decision does exist. Within practice, counterarguments are also identified as grants. Counterrargument also receive scores ranging from zero to two with the same criteria as claims, grounds and

warrants. Figure 4-3 presents example of scores for the counterargument construct within argumentation.

Scores	Counterargument statements
Score 0	No counterargument was presented.
Score 1	I grant Horse 1 was more balanced. I grant Horse 1 was more muscular
Score 2	I grant Horse 1 was more balanced easily dividing into thirds. I grant that horse 1 was more muscular, and offered greater amounts of bulging muscle through the rump and rear.

Figure 4-3. Counterargument examples and scores

Counterarguments among participants varied greatly. Within reasons set one, between 24.6% and 52.3% of participants did not offer a counterargument. Forty% to 55.4% of participants offered counterarguments that scored a one, 7.7% to 23.1% offered counterarguments that scored a two (Table 4-14). Reasons set two saw similar scores, as 24.6% to 41.5% of participants did not off a counterargument. Between 47.7% and 53.8% of participants presented counterarguments that scored a one. Between 10.8%t and 21.5% of participants scored a two on the counterargument.

Within reasons set three, between 36.9% and 60% of participants did present a counterargument. Between 33.8% and 55.4% of participants presented counterarguments that scored a one. 6.2% to 13.8% of participants scored a two on either of the counterarguments within the reasons set (Table 4-16). The percentage of students who scored a zero on the counterarguments in reasons set four ranged from 33.8% to 52.3%. However, 26.2% to 50.8% of participants scored a one, while 3.1% to 12.3% of participants presented counterarguments that scored a two (Table 4-17).

Table 4-17. Counterargument scores for Participants in the 2013 Florida FFA and 4-H Horse Evaluation CDE and Contest (N = 65)

	0		1		2	
	n	%	n	%	n	%
Argumentation for Performance Halter Geldings						
CA 1	16	24.6	34	52.3	15	23.1
CA 2	20	30.8	36	55.4	9	13.8
CA 3	1	1.5	21	32.3	43	66.2
Argumentation for Performance Halter Mares						
CA 1	16	24.6	35	53.8	14	21.5
CA 2	20	30.8	33	50.8	12	18.5
CA 3	27	41.5	31	47.7	7	10.8
Argumentation for Hunter Under Saddle						
CA 1	24	36.9	32	49.2	9	13.8
CA 2	24	36.9	36	55.4	5	7.7
CA 3	39	60	22	33.8	4	6.2
Argumentation for Reining						
CA 1	22	33.8	35	53.8	8	12.3
CA 2	28	43.1	33	50.8	4	6.2
CA 3	34	52.3	29	44.6	2	3.1

Note: CA = Counterargument

Rebuttals

Rebuttals represent the final argument that while an alternative placing exists the participant's claim was still correct. Rebuttals were only presented at the end of each oral reasons set. However, rebuttals still received a score ranging from zero to two with the same criteria. A zero score meant that participants did not attempt a rebuttal, while a score of one represented a weak rebuttal that did not support the grounds or warrants. A score of two was given to rebuttals that were supported by grounds and warrants. Figure 4-4 presents example of scores for the rebuttal construct within argumentation.

Scores	Rebuttal statements
Score 0	No rebuttal was presented.
Score 1	However, the horse was still the most structurally incorrect However, the horse was still the least balanced individual.
Score 2	However, the horse was the most structurally incorrect, being post legged.

Figure 4-4. Rebuttal examples and scores

Within reasons set one 18.5% of participants did not offer a rebuttal and received a score of 0. 27.7% of participants offered weak rebuttals that received a score of one. 53.8% of participants offered high quality rebuttals that received a score of two. In regards to reasons set two, 9.2% of participants received a score of zero. Secondly, 38.5% of participants presented rebuttals that received a score of one, and 52.3% of participants offered rebuttals that received a score of two. In reasons set three 16.9% of participants' rebuttals received a score of 0, 29.2% received a score of one, and 53.8% received a score of two (Table 4-18).

Table 4-18. Rebuttal scores for Participants in the 2013 Florida FFA and 4-H Horse Evaluation CDE and Contest (*N* = 65)

Category	0		1		2	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Rebuttal for Performance Halter Geldings	12	18.5	18	27.7	35	53.8
Rebuttal for Performance Halter Mares	6	9.2	25	38.5	34	52.3
Rebuttal for Hunter Under Saddle	11	16.9	19	29.2	35	53.8
Rebuttal for Reining	11	16.9	17	26.2	37	56.9

Chapter Summary

Chapter 4 presented the results from the study that aligned with each objective and also identified the demographic data of the participants in the study. The objectives were: (1) Determine the argumentation skills used by participants in a horse evaluation CDE and contest; (2) Examine the relationship between argumentation skill and participants' scores in the horse evaluation contest; and (3) Describe the argumentation levels of participants in the horse judging contest.

The findings presented in this chapter will be discussed in greater detail in Chapter 5. Chapter 5 will present the conclusions, recommendations, and implications

regarding the findings as present. The Chapter 5 will also provide a discussion of the overall findings of the study.

CHAPTER 5 SUMMARY, CONCLUSIONS, RECOMMENDATIONS

The purpose of this study was to determine the extent to which students used argumentation skills when participating in the horse evaluation CDE and contest. Chapter 1 presented that student achievement and acquisition of transferrable skills are lacking within the American public school system (Casner-Lotto & Barrington, 2007). Yet the Association for Career and Technical Education (2012) stated that career and technical education provided students with opportunities to obtain transferrable skills while aligning with their interest with viable careers. Chapter 1 also presented the problem statement and research objectives that were investigated during this study.

Chapter 2 presented the literature related to the current study. As presented in chapter two, many researchers have identified life skill acquisition as an important part of 4-H and FFA animal science based projects and competitions. Researchers (Rayfield, 2006; Voigt, 201) have also discovered the best recruiting and training practices for livestock, horse, and dairy evaluation teams on the national level. Chapter 3 discussed the research design, population and sample, instruments used, data collection process, and the data analysis techniques. Chapter 4 presented the results from the study that aligned with each objective, and also identified the demographic data of the participants in the study.

This chapter will provide a discussion of the study as a whole and provide recommendations for agricultural educators and horse judging coaches, event coordinators, and suggestions for further research.

Objectives

The purpose of this study was to determine the extent to which students used argumentation skills when participating in the horse evaluation CDE and contest. The three objectives were to:

1. Determine the argumentation skills used by participants in a horse evaluation CDE and contest.
2. Examine the relationship between argumentation skill scores in the horse evaluation CDE and contest including: reasons scores, placing of classes, and overall scores.
3. Describe the argumentation levels of participants in the horse evaluation contest.

Methods

This study was a descriptive correlational study which sought to assess the argumentation levels of students who participated in the Florida State Horse Judging Contest. Correlational research seeks to evaluate relationships and patterns between variables within a single group (Ary, Jacobs, & Sorensen, 2010). Correlation, denoted by r , assumes that the relationships between variables model a straight line; r is proportional to the slope of a line and indicates the strength of a relationship between the two variables (Agresti & Finlay, 2009). Davis (1971) stated correlations between .01 and .09 are considered negligible, .10 to .29 are low, .30 to .49 are moderate, .50 to .69 as substantial, .70 to .99 as very high, and 1.00 is perfect. Davis (1971) defined the standard to which the correlations are discussed in this study. This study followed the agenda of the complete horse judging program in the State of Florida which is facilitated by the University of Florida's Animal Science Department.

Data were collected at the 2013 Florida State Horse Judging CDE and contest. This contest is the state contest for FFA and 4-H, teams in both organizations had to

compete at a qualifying contest at the State Fair of Florida. The contest was conducted according to the 2013 rules and procedures of the Florida Horse Judging program. The state contest consisted of the participants evaluating eight placing classes—four halter classes and four performance classes. The participants were assigned to four groups for the duration of the contest. Each class consisted of four animals to be placed numerically from first (one) to last (four) based on the industry standards for the respective classes. The participants evaluated a class of performance halter geldings (class one), hunter in hand (class two), performance halter mares (class three), and Arabian sport horse (class four). The performance classes consisted of western pleasure (class five), hunt seat equitation (class six), hunter under saddle (class seven), and reining (class eight).

Reasons were given on four of the classes—two halter, and two performance classes. The reasons were given after all the classes had been evaluated and judging cards were turned in. Participants were allotted an average of thirty minutes to formulate their reasons before presenting them to a judge. The participants presented a two-minute set of oral reasons to a judge who scored them from zero to fifty. The participants presented reasons on performance halter geldings, performance halter mares, hunter under saddle, and reining. One judge was assigned to evaluate the reasons for a given class.

After the contest, the researcher evaluated the oral reasons using the argumentation rubric developed by Schen (2007). Participants could score between 0 and 20. The data was analyzed using SPSS version 20. Descriptive statistics were assessed, followed by an evaluation of the relationships between argumentation scores,

placing scores, reasons scores, and the total scores for the competition. Thirdly, responses to the coach questionnaires and team total were analyzed to see if there were any relationships. The responses to the participant questionnaires, and participant scores were also analyzed to see if any relationships existed. Lastly, descriptive statistics were evaluated to gain an understanding of which argumentation constructs participants used when constructing arguments.

Summary of Findings

The findings of this study are summarized according to the objectives. This study's population was all the participants within the 2013 Florida State Horse Judging contest (N = 65). To achieve the study's purpose, participants competed in the state horse judging contest that was facilitated by the University of Florida's Animal Science department. The oral reasons portion of the contest was audio taped, and the participants' oral reasons were evaluated against an argumentation rubric designed by Schen (2007).

Demographics and perceptions

Demographic and perceptual data were recorded using a questionnaire. The majority of participants (95.3%) were categorized as Caucasian ($n = 41$), with one participant identifying as Hispanic/Latino. The majority of participants were female (95.3%). Participants were primarily 16 years of age (41.9%) or 17 years of age (34.9%). Twenty-eight participants were FFA members, eight were 4-H members and seven said they were members of both associations. Only 12 participants previously competed at the state contest. Twenty-two participants had been judging horses for longer than a year and 21 participants had judged in other judging events.

The participant questionnaire recorded participants' perceptions toward different classes within the contest. Twenty-two participants perceived that they were best at evaluating halter classes, and 19 participants stated they enjoyed evaluating halter classes. Ten participants perceived that they were best at evaluating performance classes, and 19 participants enjoyed evaluating performance classes. Seven participants stated they least enjoyed presenting oral reasons, and nine participants identified presenting oral reasons as their weakest event.

The coach's questionnaire identified the methods coaches utilized while preparing their teams for the state contest. Practice lasted 1.46 hours on average. Teams averaged 13.15 practices in preparation for the state qualifier contest and 15 practices in preparation for the state contest. Teams averaged 3.85 live animal practices and 18.23 practices that utilized media in the form of video or pictures.

Objective One

Objective one sought to ascertain the argumentation skill used by participants in the horse judging CDE and contest. The mean argumentation score of oral reasons set one—performance halter geldings which was referred to as argumentation score one (A1) was 12.42 with a standard deviation of 3.17. The mean argumentation score of oral reasons set 2—performance halter mares, referred to as argumentation score two (A2), was 12.63 with a standard deviation of 3.19. The mean argumentation score for oral reasons set three—hunter under saddle, referred to as argumentation score three (A3), was 11.48 with a standard deviation of 2.9. Lastly, the mean argumentation score for oral reasons set four—reining, referred to as argumentation score four (A4), was 11.25 with a standard deviation of 3.26. With the median score of all argumentation scores being 10, participants within this study consistently scored higher than the median.

Objective Two

Objective two was to examine the relationship between argumentation skill scores in the horse evaluation CDE and contest including: reasons scores, placing of classes, and overall scores. Argumentation scores were assessed using the Schen (2007) rubric to evaluate participants' oral reasons. The participants within this study presented oral reasons on Performance Halter Geldings, Performance Halter Mares, Hunter Under Saddle, and Reining. The argumentation score and placing score for performance halter geldings were reported as a negative negligible relationship at $r = -.03$. The argumentation score and placing score for performance halter mares reported a low relationship at $r = .25$. The argumentation score and placing score for hunter under saddle were reported as having a negligible relationship at $r = .08$. The argumentation score and placing score for reining reported a negligible relationship at $r = .10$.

The argumentation score and reasons score for performance halter geldings reported a low relationship at $r = .16$. The argumentation score and reasons score for performance halter mares reported a moderate relationship at $r = .33$. Also, the argumentation score and reasons score for hunter under saddle reported a moderate relationship at $r = .32$. Lastly, the argumentation score and reasons score for reining reported a substantial relationship at $r = .51$.

The reasons score and placing score for performance halter geldings reported a low relationship at $r = .29$. Secondly, the reasons score and placing score for performance halter mares reported a moderate relationship at $r = .31$. The reasons score and placing score for hunter under saddle reported a low relationship at $r = .16$. Lastly a low relationship between the reasons score and placing score for reining at $r = .21$.

The total argumentation score reported a substantial relationship with the reasons total at $r = .59$. The total argumentation also reported a moderate relationship with the overall total score at $r = .32$. The total argumentation score reported a moderate relationship with the placing total score at $r = .46$. The total reasons score reported a moderate relationship with the total placings score at $r = .40$. The total reasons score, also, reported a very high relationship with the overall total score at $r = .77$.

Objective Three

This study identified the usage of claims, counterarguments, and rebuttals for argumentation. This study combined the constructs of grounds and warrants within the study, as the separation of the two in an oral reasons set can become ambiguous.

Claims were identified as the placing of each animal throughout the oral reasons. Claims were evaluated three times: first within a top pairing, second within a middle pairing, and lastly, in a bottom pairing. Within each set of reasons the majority (61.5% to 93.8%) of participants presented claims that scored one.

Grounds and warrants were identified as the actual reasons that led participants to their placements. Within this construct, participants predominantly scored a two in each class and pairing (47.7% to 92.3%).

Counterarguments were identified as the acknowledgment of a different view point or placing. Counterarguments in this study were observed when a participant recognized or stated the possibility of placing a pair of animals a different way. This construct had a greater variability in scores as participants scored either a one or a zero. Interestingly, the first three reasons sets presented a pattern of participants scoring a one on the first and second counterargument and then omitting the third. Participants primarily scored a one on the counterarguments in the fourth reasons set.

As defined by Zohar and Nemet (2002), rebuttals constitute that an argument is high quality. This study identified rebuttals as the closing to an oral reasons set. Almost half of the participants (52.3% to 56.9%) scored a two on their rebuttals in each of the reasons sets.

Conclusions

The population for this study was the participants who had advanced to the Florida State Horse judging contest. The conclusions from this descriptive correlational study are as follows:

1. The majority of participants in this study were Caucasian, female, and ranged in between 16 and 17 years of age.
2. Participants perceived themselves to be the best at evaluating halter classed and worst at evaluating performance classes.
3. Team practices lasted between one and two hours. Teams conducted, on average, 13 practices for the state qualifier contest, and averaged 15 practices for the state contest.
4. Participants exhibited mid to high argumentation skill abilities.
5. There is not a direct relationship between placing a class of four animals and argumentation skills.
6. Participants who can formulate oral reasons can also formulate affective argumentation.
7. Teams that have participants with high argumentation skill place higher in the horse evaluation contest.
8. There is an indirect relationship between the ability of participants to place a class of animals and participants' argumentation skill.
9. In this study, participants presented high quality argumentation that had claims, grounds and warrants, counterarguments, and rebuttals. Implications

Implications

Demographics and participant perceptions

Conclusion: the majority of participants were Caucasian, female, and either 16 or 17 years old.

It was expected that the majority of participants would be Caucasian, and female. As 44% of the National FFA membership is female, and 67% is Caucasian (National FFA, 2012). The findings are also supported by Croom, Moore, and Armbruster (2009) that 92.2% of students participating in a national CDE in 2003 were white, and that female held a majority in national CDE participation. Pate (2008) and Thoron (2010) identified a majority of students enrolled public school school-based agricultural science program were categorized as Caucasian. Also, Burlison (2013) identified a majority CDE participants were classified as Caucasian. However, Rayfield's (2006) study presented an equal split on gender.

Conclusion: participants perceived themselves to be the best at evaluating halter and worst at evaluating performance classes.

Participants reported that they thought they were best at evaluating halter classes and enjoyed evaluating these classes more. Conversely, participants reported that evaluating performance classes was their least enjoyed class, and they perceived themselves to be worst at evaluating performance classes.

These perceptions could be contributed to the wide array of classes that are eligible to be in a horse judging contest. Halter classes are based strictly on the conformation of the animal. These classes are evaluated on similar criteria such as structural correctness, balance, muscularity, quality, and breed characteristics.

Performance classes, however, present a unique challenge by requiring the participant to evaluate horses that are moving in an arena simultaneously, or that are

performing a designated pattern. While similar criteria such as obedience or manners, consistency, and quality of movement are being evaluated, participants may also have to learn different patterns, penalties, deductions, and disqualifications for each class.

Conclusion: team practices lasted between one and two hours. Teams conducted, on average, 13 practices for the state qualifier contest, and averaged 15 practices for the state contest.

Coaches in this study reported team practices averaged one and half hours of practice. Coaches also reported conducting 13 practices in preparation for the state qualifier contest, and 15 practices for the state contest. This is supported by Burleson (2013) who stated that teachers, on average, trained CDE teams for six weeks.

Objective One: Determine the argumentation skills used by participants in a horse evaluation CDE and contest

Conclusion: Participants exhibited mid to high argumentation skill abilities.

Participants' argumentation scores were consistently above the median score for argumentation rubric. Participants' average argumentation scores were 12.43 (SD = 3.18), 12.63 (SD = 3.19), 11.48 (SD = 2.9), and 11.25 (SD = 3.26) on performance halter geldings, performance halter mares, hunter under saddle, and reining, respectively. A score of ten indicated that a participant had scored a one on each segment of an argument; claim, ground, warrant, counterclaim, and rebuttal. The averages, however, indicate that participants can formulate reasons and argumentation that contain claims, grounds, warrants, counterclaims, and rebuttals. The argumentation scores of participants in this study were higher than the argumentation scores found in Burleson's (2013) study and consistent with the scores of participants who received inquiry-based instruction in Thoron's (2010) study.

Objective Two: Examine the relationship between argumentation skill, reasons scores, placing of classes, and overall scores in the horse judging CDE and contest.

Conclusion: There is not a direct relationship between placing a class of four animals and argumentation skills.

The relationships between the placing scores and argumentation scores were negligible and the relationship between placing scores and reasons scores was low. The negligible relationships indicated that there is not a link between ability of participants to place a class, and the ability of participants to create argumentation. Furthermore, the ability of participants to place a class has no real bearing on a participant's abilities to create oral reasons. However, as Moore (2006) stated, participants must understand the criteria used for evaluating class before they can communicate their decisions accurately. The negligible relationship can be expected according to von Aufshnaiter, Erduran, Osbourne and Simon (2007) who explicitly stated that "any attempt to develop students' knowledge through argumentation must be related to the students' prior knowledge" (p. 127).

Conclusion: Participants who can formulate oral reasons can also formulate affective argumentation.

Participants who can speak oral reasons well have high argumentation skills. Reasons scores and argumentation scores relationships ranged from low to very high. Participants that had a high reasons score also had a high argumentation score. The total reasons score and total argumentation score had a moderate relationship.

This study provided evidence that participants who created oral reasons also have a strong likelihood of creating high quality arguments. As mentioned in previous chapters, arguments are the presentation and defense of a given stance. Oral reasons were seen to mirror this construct. The respective argumentation and reasons scores

aid in identifying the link between oral reasons and argumentation. Von Aufshnaiter et al. (2007) provided further support for this conclusion, as reasons are taught based on the evaluation class and the importance of each construct within a reason set.

Conclusion: teams that have participants with high argumentation skill place higher in the horse evaluation contest.

The total reasons score reported a very high relationship with the overall score within the competition. Reasons are a determining factor within the overall score, therefore high scoring participants, had high scoring reasons, and high argumentation scores. This relationship was expected as reasons scores are part of the overall score within the competition. However, the link between reasons scores and placement scores require deeper discussion. This relationship indicated that there is a link between a participant's ability to place scores and create an oral reason. This can be expected considering that Moore (2006) identified that communication of evaluation was the last step in training an evaluation team, and that the preceding steps were to establish a knowledge base, evaluation criterion, and application of the criteria. Participants first had to know how to place a class before they could communicate the placings. Thoron (2010) found that students who are taught inquiry-based instruction scored higher on content knowledge scores and argumentation. Furthermore, Zohar and Nemet (2002) stated that participants who had a knowledge base of a subject could create effective arguments.

Conclusion: there is an indirect relationship between the ability of participants to place a class of animals and participants' argumentation skill.

According to the results of this study, the total reasons score also reported a moderate relationship with the placement total. The ability to place classes well overall,

will lead to the ability to give affective reasons, which also leads to high argumentation ability.

Objective three: Describe the argumentation levels of participants in the horse evaluation contest.

Conclusion: in this study, participants presented high quality argumentation that had claims, grounds and warrants, counterarguments, and rebuttals.

Participants present claims that obtained a score of one. These primary level claims only indicate the initial placing and do not identify the grounds on which separated the individual animals. Primary level claims such as these only indicated the initial placing and did not identify the grounds that separated the individual animals. Participants stated how a pairing was placed but did not identify the grounds on which they placed the class. Venville and Dawson (2010) support these findings as they identified these claims as a level one argument.

Participants presented grounds and warrants that primarily scored a two. Foundationally, oral reasons require participants to state the factors that separated the two animals in each class. As Moore (2006) stated, participants have to know the evaluation criteria for evaluating a class. Moore (2006) also stated that students are “trying to demonstrate to others that they have the skills to conduct sound evaluations” (p. 17). Through oral reasons, students are reflecting upon the criteria used to evaluate the class (Moore, 2006).

Also, participants in Rayfield’s (2006) study stated that they teach their team members terminology and how to evaluate a class; by doing this team members have the knowledge needed to discern the grounds and warrants needed to support their claim. Venville and Dawson (2010) support these findings, as participants in their study scored high in this area on the pretest.

Counterarguments presented the greatest amount of discrepancy as participants scored either a zero or a one. Within the oral reasons set, a counterargument is called a grant. This is the acknowledgement that the lower placed animal has something worth discussing positively. Many participants either did not attempt a counterargument or presented a primary level grant. This can be expected as Venville and Dawson (2010) observed that participants increased in higher quality arguments that utilized counterarguments and rebuttals after instruction on how to create arguments.

Participants excelled at rebuttals, presenting rebuttals which earned a score of two. The rebuttal is the final “so I placed this animal last” statement. It is stated only once throughout the reasons set. Participants could identify the negatives in the last placing animal and could readily describe why the animal was placed last. Venville and Dawson (2010) stated that rebuttals constitute high quality arguments.

Discussion

This study investigated the argumentation skills of participants in the horse judging contest and CDE, following the work of Thoron (2010) and Burleson (2013). Similarly to these two studies, this study investigated the argumentation level of participants who are involved in agricultural science and education. Like Burleson (2013), this study investigated argumentation of participants in a Career Development Event. However, this study also involved a portion of 4-H participants. As an alternative to Burleson (2013), this study investigated the use of argumentation of participants without a treatment or experiment.

The results of this study indicated that argumentation skills do exist among participants within the Horse Judging CDE when giving oral reasons. More substantially, this study supported the central idea of Kuhn (1990) that argumentation skills are latent

within students, and can be improved upon with a short intervention. While this study did not provide the intervention, teams had to practice presenting oral reasons in order to prepare for the state contest. This study suggested that the horse judging CDE and contest caters to the development of transferrable skills that Cassner-Lott and Barrington stated that students need. Furthermore, the evidence that transferrable skills are obtained through participation in Horse Judging and other evaluation events is supported by the work of Cavinder et al, (2011), Rayfield (2007), and Voigt (2012). However, this study identified a specific skill, argumentation, which Beyer (1937) stated was the culmination of critical thinking. Furthermore the findings of this study were substantiated by Burleson (2012) who found that participants did not necessarily have to be taught argumentation in order to have high quality arguments in the Agricultural Sales CDE. von Aufschnaiter, Eduran, Osbourne, and Simon (2007) provided an even stronger pillar for these findings, as they found that students can create high quality arguments without specifically being taught argumentation.

It is important to note that the relationship between argumentation scores and reasons scores were low to very high. The relationship between reasons set one and argumentation set one, performance halter geldings, had a low relationship at $r = .16$. This could be due to several factors such as novelty, nervousness, forgetfulness or stress. The other reasons scores and argumentation had moderate relationships. Reasons set four and argumentation set four, reining, had a very high relationship at $r = .51$. This primarily had to do with the way participants presented their oral reasons. Not only did students state how the pairing was placed but they also described the criteria

that separated the two individuals. The participants exhibited a greater depth of thought when discussing counterarguments and rebuttals.

There appeared to be a disconnect among placing scores, reasons scores, and argumentation scores. While the total placing score and total reasons score reported a moderate relationship, the relationship between placing score total and argumentation score total was low. However, reasons and argumentation are the defense of the chosen placing. Reasons and argumentation are an explanation of the thought process behind the placing.

Fluctuations in relationships could be due to the coaching formats used to evaluate the separate classes. Halter classes such as performance halter geldings and performance halter mares are based purely on the appraisal of the animal's structural correctness, balance, muscling, and quality. Reining, trail, and western riding classes are scored based on each maneuver or obstacle an animal executes. Scored classes (reining, western riding, trail) require participants to score each maneuver and assign a point value to the maneuver. These scores are added together and then the animals are placed first to last based on their total scores. The act of thinking about each maneuver adds to participants' abilities to formulate grounds, warrants, counterarguments, and rebuttals within an argumentation set because within a scored class the identification of a maneuver score is the ground, the correctness of the maneuver is a the warrant, the admission that another performer completely an equally challenging maneuver is a counterargument, and the statement that the total score was higher or the quality of the maneuver was better is the rebuttal.

The development of participants' abilities to think critically, analyze, evaluate, and communicate a decision are critical in developing a more skilled workforce. Industry leaders are constantly looking for employees who have the skills that are obtained through this CDE. As stated in McCann and McCann (1992) "Judging team programs for any animal science commodity represents a unique opportunity to develop student knowledge, communication skills, personal character, and leadership, which will ultimately strengthen the employment skills and marketability of graduates" (p. 12). Horse evaluation with participants presenting oral reasons promotes argumentation skills that may transfer into the skills called for by industry leaders.

Recommendations for Practitioners

Based on the findings of this study, the following recommendations were made for practitioners in secondary school agriculture education and horse evaluation coaches:

1. Agriculture teachers and horse judging coaches should improve student performance and efficacy towards performance classes such as Hunter Under Saddle, Western Pleasure, Reining, and Hunt Seat Equitation through the increased performance class practices, attendance of invitational contests, clinics, and live practices. This will allow for students to get used to the pace of a live performance animal class.
2. Teachers and coaches should teach participants how to create and present oral reasons when initially beginning practices. Furthermore, reasons should be spoken at each practice in order to help students become more familiar with presenting and creating oral reasons.
3. Within creating reasons, emphasis should be placed on making claims, counterarguments and rebuttals.
4. Horse judging practices should last about one and a half hours and there should be about 28 practices to help prepare for the state contest.

Recommendations for Event coordinators

Based on the findings of the study the following recommendation was made for event coordinators:

1. The formation of training modules should be developed for CDE's to help agriculture educators and coaches prepare students for contest.

Recommendations for Further Research

Based on the findings of the study the following recommendations were made for future research:

1. This study should be replicated in other evaluation based CDE's such as livestock, meat, and land evaluation.
2. This study should be replicated with a great number of participants and in other states where participants present oral reasons.
3. This study should also be replicated and the oral reasons be transcribed and evaluated for factual evidence and common themes.
4. Further research should be conducted to compare teacher or coach argumentation skills to the performance of the teams they train.
5. Argumentation scores within the evaluation CDE should be compared to an argumentation test that participants take after the contest.

Chapter Summary

Chapter 5 presented the summary of the objectives that guided this study. This chapter also provided conclusions based on the findings of the study, and offered recommendations for agricultural educators and horse judging coaches, event coordinators, and future research. The objectives of this study were: (1) determine the argumentation skills used by students who participate in a horse judging CDE and contest, (2) examine the relationship between argumentation skill, reasons scores, placing of classes, and overall scores in the horse judging CDE and contest, and (3) describe the argumentation levels of participants in the horse evaluation contest.

The findings of this study indicated that participants average argumentation scores were about the rubric median. There were low to very high relationships reported between reasons scores and argumentation scores. Participants were able to formulate reasons that progressed through each construct of the argumentation rubric. The findings of this study indicate that participation in the horse evaluation CDE and contest aid in the development of argumentation skills.

APPENDIX A
PARTICIPANT QUESTIONNAIRE

Please answer the questions fully and to your best ability.

Name: _____

School/County Name: _____

Gender: Male or Female

Ethnicity: (circle or X all that apply)

Caucasian African American Hispanic
 Asian/Pacific Islander Other: _____

Age: _____

I am a: 4-H Member FFA Member Both

Do you participate in other horse related events? What are they?

Have you participated in the State horse judging contest before? (circle or X one) YES
 NO

If yes, how many times? _____

Do you participate in speaking events? (circle or X one) YES NO

If yes, which ones?

How many years have you participated in horse judging? (circle or X one)

Less than 1 year 1 year 2 years 3 years
 4 years More than 4 years

Have you participated in other judging events? (circle or X one) YES NO

If yes, for how many years? (circle or X one)

Less than 1 year 1 year 2 years 3 years
 4 years More than 4 years.

What event do you think you do the best at evaluating?

What event in horse judging do you enjoy the most?

What event in horse judging do you least enjoy?

What do you think is your weakest event?

APPENDIX B
TEAM QUESTIONNAIRE

School/County Name: _____

How many students are on your team? ___3 ___4 ___5

How many males do you have your team? ___0 ___1 ___2 ___3 ___4 ___5

How many females do you have on your team? ___0 ___1 ___2 ___3 ___4 ___5

Have your team members participated in the state contest before? How many?

How many hours does your team practice normally last? (circle one)

___ Less than 1 hour ___ 1-2 hours ___ 2-3 hours ___ 3-4 hours
___ more than 4 hours

How many practices did your team have in preparation for the contest in February?
(circle one)

___1 ___2 ___3 ___4 ___5 ___6 ___7 ___8 ___9 ___10 ___11 ___12 ___13 ___14 ___15 ___16
___17 ___18 ___19 ___20 other _____

How many practices did your team have in preparation for the State contest? (circle one)

___1 ___2 ___3 ___4 ___5 ___6 ___7 ___8 ___9 ___10 ___11 ___12 ___13 ___14 ___15 ___16
___17 ___18 ___19 ___20 other _____

How many practices did your team evaluate live horses? (circle one)

___1 ___2 ___3 ___4 ___5 ___6 ___7 ___8 ___9 ___10 ___11 ___12 ___13 ___14 ___15 ___16
___17 ___18 ___19 ___20 other _____

How many practices did your team use pictures, videos, or some other media to evaluate
classes? (circle one)

___1 ___2 ___3 ___4 ___5 ___6 ___7 ___8 ___9 ___10 ___11 ___12 ___13 ___14 ___15 ___16
___17 ___18 ___19 ___20 other _____

Did your team attend the horse judging clinic hosted by the University of Florida in
December? (circle one) ___YES ___NO

Did your team attend the reasons clinic hosted by the University of Florida in March?
(Circle One) YES NO

APPENDIX C
PARENTAL CONSENT FORM

Dear Parent/Guardian:

Your child's horse judging team has been selected to participate in a research study to examine if argumentation skills exist amongst participants in the horse judging contest. The results of this study will be used to improve the instruction and the contest for programs state-wide. These results may not directly help your child today, but will benefit future students.

Your child's oral reasons in the competition were audio recorded. The recording will be evaluated by a researcher, analyzed, and then deleted upon completion of the study. The audio files will be stored in a secure location and your child's identity will be held confidential to the extent of the law. There is no risk involved in participating in this study.

If you have any questions about this research protocol, or want to withdraw your child's data please contact Kendrick L. Spencer, Graduate Assistant, at kendricklspencer@ufl.edu, or Dr. Andrew C. Thoron, Assistant Professor, at athoron@ufl.edu or (352) 392-0502, or mail this form back to Agricultural Education and Communication Department, University of Florida, P.O. Box 110540, Gainesville, FL 32611. Questions or concerns about your child's rights as a research participant may be directed to the UFIRB Office, University of Florida, Box 112250, Gainesville, FL 32611, (352) 392-0433.

Parent/Guardian: _____ Date: _____

APPENDIX D
INFORMED CONSENT FOR PARTICIPANTS

Protocol Title: Evaluating argumentation skills of participants in the horse judging contest.

Please read this consent document carefully before you decide to participate in this study.

Purpose of the research study:

The primary purpose of this study is to determine if students who participate in the horse judging contest have argumentation skills.

What you will be asked to do in this study:

You will be asked to participate in the horse judging contest. Additionally, the oral reasons portion of the contest will be recorded. The recorded audio/video tapes will be securely stored and then destroyed at the completion of the study.

Time Required:

No additional time is required other than the time at the competition.

Risk and Benefits:

There are no anticipated risks or benefits to your participation in this study.

Confidentiality:

Your identity will be kept confidential to the extent allowed by law.

Voluntary participation:

Your participation in this study is completely voluntary. There is no penalty for not participating.

Right to withdraw from study:

You have the right to withdraw from the study at any time without consequence.

Whom to contact if you have questions about the study:

Kendrick L. Spencer, Graduate Assistant, Agricultural Education and Communication Department, P.O. Box 110540, P: (352) 392-0502, F: (352) 392-9585, kendricklspencer@ufl.edu

Dr. Andrew C. Thoron, Assistant Professor, Agricultural Education and Communication Department, P.O. Box 110540, P: (352) 392-0502, F: (352) 392-9585, athoron@ufl.edu

Whom to contact about your rights as a research participant in the study:

UFIRB Office, Box 112250, University of Florida, Gainesville, FL 32611-2250; P: (352) 392-0433

Agreement:

I have read the procedure described above. I voluntarily agree to participate in the procedure and I have received a copy of this description.

Participant: _____ Date: _____

Principal Investigator: _____ Date: _____

APPENDIX E
LETTER TO COUNTY EXTENSION AGENTS AND AGRICULTURAL EDUCATORS

Dear County Extension Agent/ Agricultural Educator,

Congratulations on qualifying for the 2013 State Horse Judging Contest. We are looking forward to a great competition. By qualifying for the state contest your team was selected to be in a research study by the University of Florida's Agricultural Education and Communication department. This study is investigating the argumentation skills and participation level of teams who qualified for the state contest.

The information gained in this study will contribute the body of knowledge about skills gained by students who participate in competitions in FFA and 4-H. It is important to receive your input on the subject of how evaluation team members are chosen and the abilities they gain from competing in the contests.

Attached is a simple questionnaire about how you prepare your team for the horse evaluation contest. Please complete the questionnaire so that we might find further information that describes academic skills students obtain by participating in contests. Thank you in advance for your participation and good luck.

Thank you,

Kendrick L. Spencer & Dr. Andrew C. Thoron

APPENDIX E
ARGUMENTATION RUBRIC

Schen, M.S. (2007). Scientific reasoning skills development in the introductory biology courses for undergraduates. Unpublished doctoral dissertation, The Ohio State University, Columbus.

Item Number	0	1	2
1 – Claim made	No claim made or claim made is irrelevant to data/scenario presented	Claim made is weakly related to or supported by data/scenario presented or is too broad/general	Claim made is clearly related to data/scenario presented and is conservative
2 – Grounds used	No grounds used or grounds used are irrelevant to data/scenario presented (“all data”)	Grounds given weakly support claim made and/or are too general	Grounds given sufficiently support claim made, identifying specific data and trends
3 – Warrants given	No warrants given or warrant given is irrelevant to data/scenario presented or is completely unclear	Warrant weakly related grounds to claim or is somewhat unclear	Warrant is valid in light of grounds used and claim made
4 – Counterargument generated	No counterarguments generated or counterargument generated is irrelevant to data/scenario presented or not opposed to initial claim at all	Counterargument given is weakly opposed to initial claim or supported by/related to data/scenario presented (no answer to “why”)	Counterargument given is clearly related to data/scenario presented and opposes initial claim
5 – Rebuttal offered	No rebuttal offered or rebuttal offered is irrelevant to data/scenario presented (“both valid” or “more research needed”)	Weak rebuttal offered, not supported by grounds or just expansion on warrant/claim	Rebuttal is clearly identified and supported by grounds, offers new viewpoint

If the individual begins the assessment in earnest and leaves items blank, those items are scored as 0.

APPENDIX G
ARGUMENTATION SCORE SHEET

Contestant Number:	4-H/FFA:
Class:	Reasons Score:

Placing:		
1 st Pair	Scores C	Total
	GW	
	CA	
2 nd Pair	Scores c	Total
	GW	
	CA	
3 rd Pair	Scores C	Total
	GW	
	CA	
	R	

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BIOGRAPHICAL SKETCH

Kendrick L. Spencer grew up in Apple Springs, Texas. His family owned a small commercial cow-calf operation. However, it was Kendrick's country extension agent, Mr. James Alford, who sparked Kendrick's interest in agriculture. Kendrick served as Vice President for the McGee Bend District FFA Association his sophomore year of high school, then served as the Area IX FFA Association President his senior year. Kendrick graduated from Apple Springs High School in 2009 as the Salutatorian.

Kendrick then attended Texas A&M University and received his Bachelor of Science degree in agricultural science in 2012. Kendrick was also a member of the Texas A&M Collegiate Horse Evaluation team from 2010 to 2011. Kendrick student taught at Cedar Park High School, in Cedar Park, Texas, under the guidance of Mr. Jack Winterrowd. Kendrick was a member of the Alpha Gamma Rho, professional agricultural fraternity until January of 2011. While enrolled at Texas A&M University Kendrick continued to own and operate a small purebred Beefmaster cattle operation in conjunction with his family's farm.

Following the completion of the B.S. degree in 2012, Kendrick accepted a graduate teaching and research assistantship with the Agricultural Education and Communication Department of the University of Florida to begin work on a Master of Science. As a graduate teaching and research assistant, Kendrick taught various courses within the department, and conducted research in various areas of agricultural education.